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\* \* Issued\_Patents\_NA:\*
1: /cgn2\_6/ptodata/1/ina/5A\_COMB.seq:\*
2: /cgn2\_6/ptodata/1/ina/5B\_COMB.seq:\*
3: /cgn2\_6/ptodata/1/ina/6A\_COMB.seq:\*
4: /cgn2\_6/ptodata/1/ina/6B\_COMB.seq:\*
5: /cgn2\_6/ptodata/1/ina/PCTUS\_COMB.seq
6: /cgn2\_6/ptodata/1/ina/PCTUS\_COMB.seq Database

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Sequence 14, Appli Sequence 7, Appli Sequence 11, Appli Sequence 12, Appli Sequence 13, Appli Sequence 13, Appli Sequence 14, Appli Sequence 7, Appli Sequence 7, Appli Sequence 2, Appli Sequence 2, Appli Sequence 1, Appli Sequence 2, Appli Description US-08-232-463-14
US-09-165-264-7
US-09-165-264-11
US-09-165-264-12
5215881-2
US-09-165-264-13
US-09-165-264-13
US-09-165-264-14
US-09-165-264-14
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US-09-165-264-14
US-09-165-264-8
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US-08-458-568A-11
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US-08-765-907A-1
US-08-398-008A-1
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US-09-249-585A-2
US-09-249-585A-2
US-09-249-585A-2 SUMMARIES  $\Box$ Length % Query Match Score Result No. 0000000 00000 oO

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00000000000000000000000000000000000000	RESULT 1 US-08-232-463-14 Sequence 14, Application 1 Sequence 14, Application 8 Sequence 15 Sequence 16 Sequence 17 Sequenc

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Score 57.4;

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Query Match

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               Indels
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Pred. No. 0.00026;
0; Mismatches 51;
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Pred. No. 0.00065;
); Mismatches 76;
                                                                                                                                                                                                                                                                                                       Vinayagamoorthy, Thuraiayah
/ENTION: Multi-Loci Genomic Analysis
//CE: 44747
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FNTION: Multi-Loci Genomic Analysis
                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Multi-Loci Genomic A. FILE REFERENCE: 44747
CURRENT APPLICATION NUMBER: US/09/165,264
CURRENT FILING DATE: 1998-10-01
NUMBER OF SEQ ID NOS: 14
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Multi-Loci Genomic A
FILE REFERENCE: 44747
CURRENT APPLICATION NUMBER: US/09/165,264
CURRENT FILING DATE: 1998-10-01
NUMBER OF SEQ ID NOS: 14
SOFTWARE: Patentin Ver. 2.1
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Patent No. 6197510
                                                                                                                                                                                                                                                                     Sequence 7, Application US/09165264 Patent No. 6197510 GENERAL INFORMATION: APPLICANT: Vinayagamoorthy, Thura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
Similarity 2.1%; Pre 4; Conservative 140;
                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA ORGANISM: Artificial Sequence
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ilarity 56.8%;
Conservative
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nes 100; Conser
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GENERAL INFORMATION:
APPLICANT: Vinayaga
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-09-165-264-11/c
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3-09-165-264-7/C
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LENGTH: 320
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; OTHER INFORMATION: Description of Artificial Sequence: Primer sequence US-09-165-264-11
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5215881-2/c
; Patent No. 5215881
; Patent No. 5215881
; TITLE OF INVENTION: PSEUDORABIES DIAGNOSIS PROBES
; NUMBER OF SEQUENCES: 3
; CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/537,855
; FILING DATE: 13-JUN-1990
; FILING DATE:
                                                                 i5;
61;
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Patent No. 6197510

GENERAL INFORMATION:

APPLICANT: Vinayagamoorthy, Thuraiayah

TITLE OF INVENTION: Multi-Loci Genomic Analysis

FILE REFERENCE: 44747

CURRENT APPLICATION NUMBER: US/09/165,264

CURRENT FILING DATE: 1998-10-01

NUMBER OF SEQ ID NOS: 14

SOFTWARE: Patentin Ver. 2.1
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Pred. No. 0.00088;
); Mismatches 57;
                                              Score 54.4; DB 4;
Pred. No. 0.00065;
); Mismatches 61
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ilarity 59.9%;
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US-09-165-264-13/c
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US-07-945-283-1
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LOCATION:
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LOCATION:
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ENGTH: 320
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                                      ;
                                    Indels
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Patent No. 5352596
GENERAL INFORMATION:
APPLICANT: Cheung, Andrew K.
APPLICANT: Wesley, Ronald D.
TITLE OF INVENTION: Pseudorabies Virus Deletion Mutants
TITLE OF INVENTION: Involving The EPO and LLT Genes
0.0014;
-hes 142;
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NUMBER OF SEQUENCES: 7

CORRESPONDENCE ADDRESS:

C
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1
                                    Mismatches
          Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/07/945,283
FILING DATE: 19920911
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Ribando, Curtis P
REGISTRATION NUMBER: 27976
TELECOMMUNICATION INFORMATION:
TELEPHONE: 309-685-4011 ext.513
TELEFAX: 309-685-4128
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          51.2%;
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LENGTH: 8438 base pairs
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                                Conservative
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EDNESS: double
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          Best Local Similarity
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ANTI-SENSE:
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US-07-945-283-1/c
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LOCATION:
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Pred. No. 0.00098;
D; Mismatches 74;
                                                                                                                                                                                                                         Score 53.8; DB 1;
Pred. No. 0.0017;
0; Mismatches 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Vinayagamoorthy, Thuraiayah TITLE OF INVENTION: Multi-Loci Genomic Analysis FILE REFERENCE: 44747 CURRENT APPLICATION NUMBER: US/09/165,264 CURRENT FILING DATE: 1998-10-01 NUMBER OF SEQ ID NOS: 14 SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 13, Application US/09165264 Patent No. 6197510 GENERAL INFORMATION: APPLICANT: Vinayagamoorthy, Thurai
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larity 57.0%;
Conservative 0
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ORGANISM: Artificial Sequence
FEATURE:
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ilarity 51.2%;
Conservative
variation
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NO.
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                                                                   Patent No. 6197510
GENERAL INFORMATION:
APPLICANT: Vinayagamoorthy, Thuraiayah
TITLE OF INVENTION: Multi-Loci Genomic Analysis
FILE REFERENCE: 44747
CURRENT APPLICATION NUMBER: US/09/165,264
CURRENT FILING DATE: 1998-10-01
NUMBER OF SEQ ID NOS: 14
                                                                                                                                                                                                                                                                                 Score 53.4; DB Pred. No. 0.0011
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One Liberty Place, 46th floor
Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/458,568A
FILING DATE: 02-JUNE-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 11, Application US/08458568A; Patent No. 5821339; GENERAL INFORMATION:
APPLICANT: Schaffer, Priscilla A.
APPLICANT: Yeh, Lily
TITLE OF INVENTION: Infections and TITLE OF INVENTION: Infections
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: Woodcock, Washburn, Kuily
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SYSTEM: PC-DOS/MS-DOS
WordPerfect 5.1
                                                          Sequence 8, Application US/09165264
Patent No. 6197510
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Ph.D., Kathryn R.
NUMBER: 36,317
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ilarity 60.8%;
Conservative
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PRIOR APPLICATION DATA:
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ORGANISM: Artificial
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                                    RESULT 8
US-09-165-264-8/C
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LENGTH: 319
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CITY: P
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Best Local :
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US-09-165-264-14
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Pred. No. 0.0016;
); Mismatches 74;
                                                                                                                                                                                                                                                                                      Score 52.8; DB 1;
Pred. No. 0.003;
); Mismatches 102;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGGGCCTCGTTCGCCGCTGGGCCGGCCGGCCGGAG
                                                                                                                                                                        HYPUINE.
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Herpes simplex virus
~~RAIN: Herpes Simplex Virus Type 1
 DFCI-0029
TELEPHONE: (215) 568-3100
TELEFAX: (215) 568-3100
TELEFAX: (215) 568-3439
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 12001 hare
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                                                                                                                                                                                                                                                                                                                    0;
                                                                                        LENGTH: 12001 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
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ORGANISM: Artificial Sequence
FEATURE:
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llarity 56.7%;
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ilarity 52.8%;
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Best Local Similarity
Matches 114; Conser
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US-09-165-264-14/C
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LENGTH: 320
TYPE: DNA
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 Version #1.30
                                                                                                                                                                  Center
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Pred. No. 0.0093;
0; Mismatches 131;
                                                                                           Weissman, Sherman
Baskaran, Namadev
/ENTION: AMPLIFICATION OF NUCLEIC
                                                                                    APPLICANT: Weissman, Sherman
APPLICANT: Baskaran, Namadev
TITLE OF INVENTION: AMPLIFICATION OF NUCLEIC
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 701 Fifth Avenue, 6300 Columbia Ce
CITY: Seattle
                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: NO. 6114150tenburg Ph.D., Carol
REGISTRATION NUMBER: 39,317
REFERENCE/DOCKET NUMBER: 390036.402C1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                          US/08/758,662
                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: LatentIn Release #1.0,
                                           US-08-758-662-4/c; Sequence 4, Application US/08758662; Patent No. 6114150; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7, Application US/08845998
. 5879892
                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 49.4%;
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: (206) 682-6031 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                : 530 base pairs
nucleic acid
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GENERAL INFORMATION:
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US-08-845-998-7/C
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US-08-758-662-4
                                                                                                                                                             STREET:
CITY: Se
STATE: W
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Best Local 9
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                                                                                                                                                                                          COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/845,998
FILING DATE:
CLASSIFICATION: 435
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                                                                       LEUKEMIA ASSOCIATED GENES
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NAME: Van Amsterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L046;
TELECOMMUNICATION INFORMATION:
TELEFAX: (617)720-3500
TELEFAX: (617)720-2441
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 4524 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
Van Baren, Nicolas
Coulie, Pierre G.
De Smet, Charles
Lucas, Sophie
Boon, Thierry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
US-09-206-537-7/c
; Sequence 7, Application US/09206537
; Patent No. 6130052
                                                                                                               2: Wolf, Greenfield 600 Atlantic Avenue
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larity 49.48;
Conservative
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                                                     APPLICANT: Boon, Thier
TITLE OF INVENTION: LE
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
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Best Local Similarity
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                                                                                                             ADDRESSEE:
APPLICANT:
APPLICANT:
APPLICANT:
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; LOCATION:
US-08-845-998-7
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                                         APPLICANT:
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10.0%;
ilarity 49.4%;
Conservative
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                           FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                  TITLE OF INVENTION: LE NUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS
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                                                                                                                                                      ADDRESSEE:
STREET: 60
CITY: Bost
STATE: MA
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 RESULT 14
US-09-430-854-7/c
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; LOCATION;
US-09-430-854-7
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                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 49.4; DB Pred. No. 0.014; D; Mismatches 1
                                                                                                        APPLICANT: Van Baren, Nicolas
APPLICANT: Coulie, Pierre G.
APPLICANT: De Smet, Charles
APPLICANT: Lucas, Sophie
APPLICANT: Boon, Thierry
TITLE OF INVENTION: LEUKEMIA ASSOCIATED
                                                                                                        Sacks,
                                                                                                                                                                                                                                                                                                                                                        L0461/7008
                                                                                                                                                                                                                                                US/09/206,537
                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/845,998
FILING DATE:
                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Van Amsterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L0461
TELECOMMUNICATION INFORMATION:
TELEFAX: (617)720-3500
TELEFAX: (617)720-3500
TELEFAX: (617)720-2441
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 4524 base pairs
TYPE: nucleic acid
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                                                                                                     3: Wolf, Greenfield
600 Atlantic Avenue
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatil
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ilarity 49.4%;
Conservative
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FILING DATE:
CLASSIFICATION:
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GENERAL INFORMATION:
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128; Conser
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HYPOTHETICAL: NO
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                                                                                                     ADDRESSEE:
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US-09-206-537-7
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                                                                                                                           CITY:
STATE:
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Best Local
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                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/430,854
                                                                                                                            LEUKEMIA ASSOCIATED GENES
                                                                                                                                                                             P. C
                                                                                                                                                                              Sacks,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Van Amsterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L0461/7008
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617)720-3500
TELEFAX: (617)720-2441
                                                                                                                                                                                                                                                                                                                                                                                                                                  08/845,998
                                                                                                                                                                              ď
Sequence 7, Application US/09430854
Patent No. 6271019
GENERAL INFORMATION:
APPLICANT: Van Baren, Nicolas
                                                                                                                                                                          E: Wolf, Greenfield
600 Atlantic Avenue
                                 APPLICANT: Van Baren, Nicolas APPLICANT: Coulie, Pierre G. APPLICANT: De Smet, Charles APPLICANT: Lucas, Sophie APPLICANT: Boon, Thierry TITLE OF INVENTION
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SEQUENCE CHARACTERISTICS:
LENGTH: 4524 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
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479 GTGGTGGTGCGCCAGAGGC 461

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CTCCGAGCGTCATTCTCCGCCCCGACATTTAAACCTTGCTCCCGACAACCGCCGCCGACT 62
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                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/658,136
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: LASSEN, ELIZABETH
REGISTRATION NUMBER: 31,845
REFERENCE/DOCKET NUMBER: 31,845
REFERENCE/DOCKET NUMBER: GEN4-17.8
TELEPHONE: 508-872-8400
TELEPHONE: 508-872-8415
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 53526 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                        GENE
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                                                                                                                                                                                                                        DISEASE
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9.8%; Score 48; DB 3;
Best Local Similarity 53.8%; Pred. No. 0.048;
Matches 99; Conservative 0; Mismatches 85
                                                                            APPLICANT: KLINGER, KATHERINE W
APPLICANT: LANDES, GREGORY M
APPLICANT: BURN, TIMOTHY C
APPLICANT: BURN, TIMOTHY D
APPLICANT: CONNORS, TIMOTHY D
APPLICANT: CONNORS, TIMOTHY D
APPLICANT: GERMINO, GREGORY
APPLICANT: QIAN, FENG
TITLE OF INVENTION: POLYCYSTIC KIDNEY DI,
NUMBER OF SEQUENCES: 58
CORRESPONDENCE ADDRESS:
ADDRESSEE: GENZYME CORPORATION
STREET: ONE MOUNTAIN ROAD
CITY: FRAMINGHAM
STATE: MASSACHUSETTS
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search completed: November 19, 2002, 00:27:01
Job time : 116 secs
RESULT 15
US-08-658-136-2
Sequence 2, Application US/08658136
Patent No. 6071717
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34768
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GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
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OM protein - protein search, using sw model

May 30, 2002, 17:14:44; Search time 13.41 Seconds (without alignments) Run on:

l updates/sec

.....VVAAGDARVHKEALDALRWR 338 US-09-686-522A-14 1730 1 MLSSSSTHSDTSPFPGLAS..... score: Title: Perfect sc Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

105224 seqs, 38719550 residues Searched:

105224 hits satisfying chosen parameters: otal number

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_40:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

		ф			SUMMARIES		
Result		H					
No.	Score	tch	Length	82	ID		
П	m	9.3	26	<del>- 1</del>	нев_снгу	56160 chl	
7	O١	ø.	~	٦	SUHB_PSEAE	9hxi4 pseudomo	
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30	90.	_; .	Ω.	<b>-</b>	YSQ_AC	70714 actinoba	
31	T		246	Α,	YSO_SAL	26264 salmonel	
32		<u>.</u>	256	Α,	UHB_CA	9a3d5 ca	
3,3	81.		341	<del></del>	YSNM_CAEEL	9420 caenorhabd	

O rhizobium s						orvza sa				saccharo	
P55450	P11634	026957	042546	030298	P57372	040639	007203	P32179	P57624	P38710	P25416
Y4FL_RHISN	QAX_NEUCR	SUHB METTH	DPNP_ARATH	SUHB_ARCFU	SUHB_BUCAI	DPNP_ORYSA	SUHB MYCTU	HAL2 YEAST	CYSO_BUCAI	YHK6_YEAST	OUTG_EMENI
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275	340	280	353	252	566	358	290	357	265	295	330
10.5	10.4	10.1	6.6	9.5	9.3	9.5	9.1	8.8	8.4	8.2	8.2
181	180.5	175	171	164.5	161	158.5	157	151.5	144.5	142	141.5
						_			43		

## ALIGNMENTS

YHEB_CH ID YH AC P5		<b>-</b>	RD;	PRT;	261	AA.	
01 01 15 HY]	-NOV-1997 -NOV-1997 -DLC-1998 pothetical	(Rel. (Rel. (Rel. 28.2	35, Created) 35, Last sequencest, Last annotated by Da protein in P	Se Cic	Ω.	date) update) 3'region	
· ~ ~	lorobium v cteria: Gr	ibrio	e. r bacteria: Chlorobium		i don		
NCB	NCBI_TaxID=1098	•••					
ιĞi.	QUENCE FROM	~					
드급	STRAIN=F. TH MEDLINE=9621	3ULI 5:	LFATOPHILUM / NCI : PubMed=8626508:	NCIB 8327;	127;		
Rhi	hie GE., Avi	SS	ar Y.J., Beale S	e S.I.;		\$.I.;	
מב	"Structure and e Characterization	e c	ssion of t its encode	he Chlo	robiu e, po	hemB gene	and
٦.	Biol. Chem.	271:8	-818	996).			
1	-I- SIMILARI	TY: BELONGS	٥ ا	INOSITOL MONOP	OL MC	HOSPHATASE FAMILY.	
_	is SWISS-PROT	en	is	ight. I	It is	duced through a	collaboration
ē.			stitute	ute of Bioin	form	Bioinformatics and the EMBL outstation	ation -
the	Sean	Bio	natics In	stitute	£	here are no restrictions	on its
ğ ğ	use by non modified and	-prot this	t institutions statement is no	ons as	long	itions as long as its content is in no way is not removed lisage by and for commercial	no way
Ċ	red	uires	icense ag	reement	(See	e http://www.isb-sib.ch/a	nounce/
or	an		to license@isb-sib.ch).	b-sib.c	h).		
Ξ	 	; ; ( 1	NOT ANNOFFATED ODS	700			
S	HSSP; P29218;	; 2HHM.					
<u>-</u>	Pro;	.; 0	760; Inositol_P	a.,			
ĭα	PRINTS PRU0459	9; inosito 378: inoci	OSitol_P; 2.				
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$\Xi$		W I	2: 1.				
HYI SEC	ypothetical EQUENCE 26	ein.	28243 MW;	D25E7D	22302	D25E7D223024095F CRC64;	
5	, to	·		; ;	,		
Best Lo Matches	cal	Similarity 33. 8; Conservative	5 96 1 7 96 1 7 4	Score 334; DI Pred. No. 5.86 43; Mismatches	4; L . 5.8 tches	Score 334; DB 1; Length 261; Pred. No. 5.8e-19; 3; Mismatches 91; Indels 18; Gaps	s 4;
w	81 VAORAADA	AAGEVLRKYE	RQRVEII	DKEDHSP	VTIAE		139
	:   : 9 LALELAE	::    KAGKLTLDYE	::: GRRSLQVF	:  SKRDDTP	 VTEAD		68
14	40 E	- NGWRCAENS	SADEVWVLD	PIDGTKS	FITGK		192
9	 9 ЕFDEHPS	 	::  		 FIHGV		119
19	e	SVDGKQTTLN	GQEI SVRS	-CNLLAQ	AYLYT	ILRERWIGVDGKQTTLNGQEISVRS-CNLLAQAYLYTTSPHLFEADAEDAFIRVRNKVKV ;	251
12	1   : 20 ALGELYQA	: AERGSGAFMN	i : l : IGSPVQVSA	 IAENSAS	::  TVVFT		179
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                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a colbetween the Swiss Institute of Bioinformatics and the EMBL out the European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is impossible and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-sib.chor send an email to license@isb-sib.ch).
                                                                                                                         01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase) (Inositol-1
                                                                                                                                                                                  Pseudomonas aeruginosa.
Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 271;
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             180 VRGWGDCYGHMLVASGRAEVAVDKIMSPWDCAAVIPIVEEAGGCCFDYRG
PLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16.9%; Score 292; DB 1; I ilarity 29.7%; Pred. No. 1.1e-15; Conservative 54; Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Magnesium; Complete proteome.
271 AA; 29521 MW; EE1D43CFFEB871EA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPRO00760; Inositol_P
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
                                                                                                              41, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AE004799; AAG07205.1;
HSSP; P29218; 11MF.
                                                                                       STANDARD;
                                                                                                                                                              phosphatase) (I-1-Pase)
SUHB OR PA3818.
                                                                                                             (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                        NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P29218;
                                                                                                            01-MAR-2002
01-MAR-2002
01-MAR-2002
                                                                                    SUHB_PSEAE
Q9HXI4;
                                                                                                                                                                                                              Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hydrolase;
SEOUENCE
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Best Local S
                                                            RESULT 2
SUHB_PSEAE
252
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 GQTAGIRRAGAASLDLAYVAAGRYDAFWEFGLSEWDMAAGALLVQEAGGLVSDFTGSHEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136 IFGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILR
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                                                                                                                                                                                                                                                                                           O9CNV8;
01-MAR-2002 (Rel. 41, Created)
101-MAR-2002 (Rel. 41, Last sequence update)
101-MAR-2002 (Rel. 41, Last sequence update)
101-MAR-2002 (Rel. 41, Last annotation update)
101-MAR-2002 (Rel. 41, Last sequence in the sequence of the sequence in the sequen
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               May B.J., Zhang Q., Li L.L., Paustian M.L., Whittam T.S., Kapur "Complete genomic sequence of Pasteurella multocida Pm70.";
Proc. Natl. Acad. Sci. U.S.A. 98:3460-3465(2001).
-1- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inositol + phosphate.

COFACTOR: Magnesium (By similarity).

SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28;
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PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete protecume.
SEQUENCE 267 AA; 29470 MW; E7070FAE3BA589CA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16.6%; Score 287; DB 1; 1
llarity 30.6%; Pred. No. 2.7e-15;
Conservative 49; Mismatches 111;
                                                           -DKLHWPVTAESRPTSFNVVAAGDARVHKEALDALR
                                                                                         : | | : : | : : - : : - IVAGNTKCFKALLTTIQ
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HSSP; P29218; 11MF.
                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. STRAIN=Pm70; MEDLINE=21145866;
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83; Conser
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Best Local 3
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y M., Huber
                                                                                                                                                                                                                                                                                                            CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate.
inositol + phosphate.
COFACTOR: Magnesium (By similarity).
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
                                                                                                                                                                                                               STRAIN-VF5;
MEDLINE=98196666; PubMed=9537320;
Deckert G., Warren P.V., Gaasterland T., Young W.G., Lenox A.L. Graham D.E., Overbeek R., Snead M.A., Keller M., Aujay M., Huber Feldman R.A., Short J.M., Olson G.J., Swanson R.V.; "The complete genome of the hyperthermophilic bacterium Aquifex
                                                                                                                                                                                                                                                                                                                                                                                                                                                or
                                                                                                                                                                                                                                                                                                                                                                                                          EMBL
                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrictuse by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and feentities requires a license agreement (See http://www.isb-sib or send an email to license@isb-sib.ch).
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                                                                                                                (Inositol-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 264;
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10F32D1D3B81B76A CRC64;
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Nature 392:353-358(1998).
Nature 392:353-358(1998).
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                                      SUHB_AQUAE STANDARD; PRT; 264 AA. 067791; 01-MAR-2002 (Rel. 41, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update) 01-MAR-2002 (Rel. 41, Last annotation update) Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ore 279; DB 1; I
ed. No. 1.1e-14;
Mismatches 106;
                                                                                                                                                               Aquificales; Aquificaceae; Aquifex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 279;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; FALSE_NEG.
Hydrolase; Magnesium; Complete prot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPVTAESRPTSFNVVAAGDARVH 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               th 18; Schrifty 28.5%; Property 28.5%; Property 75; Conservative 54;
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HSSP; P29218; 11MF.
                                                                                                                      phosphatase) (1-1-Pase).
SUHB OR IMP2 OR AQ_1983.
                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                               Bacteria; Aquific
NCBL_TaxID=63363;
                                                                                                                                    SUHB OR IMP2 OR A
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Best Local
                 RESULT 4
SUHB_AQUAE
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                                                                                                                                                                                                                                                                                                           STRAIN=RD / KW20 / ATCC 51907;
MEDLINE=95350630; PubMed=7542800;
Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.I Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.P. McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D., Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C. Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Venter J.C.;
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inositol + phosphate.
COFACTOR: Magnesium (By similarity).
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
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                                                                                                                                                                                                               Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of Haemophilus
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4499 MW; DF974E0DABOCCEA6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     influenzae Rd.";
Science 2 9:496-512(1995).
-1- CATAL: IC ACTIVITY: Myo-inositol 1-monophosphate
                          vi-MAR-2002 (Rel. 41, Last sequence update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
SUHB OR HI0937.
Haemophilus influence.
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3.9e-14;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ed. No. 3.9e
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15.7%; Score 272; 30.8%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pro; 1PR000760; Incsitol_P. PF00459; inositol_P; 1.
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PRINTS; PR00378; INOSPHPHTASE
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
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HSSP; P29218; 2HHM.
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STANDARD;
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4; Conservative
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SEQUENCE 267 AA; 2
                                                                                                                                                                                                                                                              NCBI_TaxID=727;
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SUHB_HAEIN
P44333;
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Best Local S
Matches 84
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Matches 80
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                                                                                                                                                                                                                                               Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SVEQFLDVAVEAAKKAGEIIREGFYKTKHVEHKGMVDLVTETDKACEDFIFNHLKQRFPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HAIFGEENGWRCA - - ENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AFI
SEQUENCE FROM N.A.
STRAIN=CV. VENT CHERRY;
MEDLINE=96351935; PubMed=8718627;
Gillaspy G.E., Keddie J.S., Oda K., Gruissem W.;
Gillaspy G.E., Keddie J.S., Oda K., Gruissem W.;
"Plant inositol monophosphatase is a lithium-sensitive e..zyme by a multigene family.";
Plant Cell 7:2175-2185(1995).
-! - FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INOSITOL FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSI--! - CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNALING
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 268;
                                                                                                                                                                                              (IMPase
                                                                                                                                                                                                                     Lycopersicon fisculentum (Tomato).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Traches Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYT---TSPHLFEADA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INOSITOL MONOPHOSPHATASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Multigene family.
BCB635A029804901 CRC64;
                                                                                                                                                                                           3.25)
                                                                                                                                                                                                                                                                                                                                                                                                                                    inositol + phosphate.
COFACTOR: REQUIRES MAGNESIUM (BY SIMILARI Y).
ENZYME REGULATION: INHIBITED BY LI(+).
PATHWAY: KEY ENZYME OF THE PHOSPHATIDYL INOSITOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15.3%; Score 265.5; DB 1; larity 30.2%; Pred. No. 1.2e-13; Conservative 48; Mismatches 117;
                                                                                                                                                                              update)
3 (EC 3.1.3
                                                                                                                                                    01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Myo-inositol-1(or 4)-monophosphatase 3 (EC
                                       336
                                    304 LHWPVTAESRPTSFNVVAAGDARVHKEALDALR
                                                  -AGNSYLRSGNIIAA-PSRVIKEMLNKIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; IPR000760; Inositol_P
F00459; inositol_P; 1.
PR00378; INOSPHPHTASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Lithium; SEQUENCE 268 AA; 29054 MW;
                                                                                                                                                                                                       (Inositol monophosphatase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U39059; AAB19031.1;
HSSP; P29218; 2HHM.
                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: BELONGS
| : + | | | RRTGSAALDL---CY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR00(Pfam; PF00459; PRINTS; PR00378
                                                                                                                           MYO3_LYCES
P54928;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
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Best Local S
Matches 83
                                                                                                                MYO3_LYCES
           183
                                                             232
                                                                                                                                                                                                                 IMP3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN-LT2 / SGSC1412 / ATCC 700720;
MEDLINE-21534948; PubMed-11677609;
MCClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreille P., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D. Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney E., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
"Complete genome sequence of Salmonella enterica serovar Typhimurium LT2.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               myo-
RVRNKVKVPLYGCDCYAYAL -- LASGFVDIVVESGL-KPYDFLSLVPVIEGAGGSITDWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LVEVAORAADAAGEVLRKYFR--QRVE1IDKEDHSPVTIADREAEEAMVSVILKSFPTHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 MLTIAVRAARKAGNVIAKNYETPDAVEASQKGSNDFVTNVDKAAEAVIIDTIRKSYPQHT
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                                                                                                                                                                                                                                                                                                                                                                             SUHB_SALTY STANDARD; PRT; 267 AA.

SUHB_SALTY
P58537;
01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
11-MAR-2002 (Rel. 41, Last annotation update)
11-MAR-2002 (Rel. 41, Last annotation update)
11-Spharese (EC 3.1.3.25) (IMPase) (Inositol-1-phosphatase)
11-1-Pase).
Sulmonella typhimurium.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae; Salmonella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LT2.";
Nature 413:852-856(2001).
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 =
inositol + phosphate.
-!- COFACTOR: Magnesium (By similarity).
-!- SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY-!- SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20;
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FC46D8A8298BB334 CRC64;
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Pred. No. 2.3e-13;
                                                                                                                                                                                                                                                        266
                                                                                                                                                                                                   335
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                                                                                                                                                                                           GDKLHWPVTAESRPTSFNVVAAGDARVHKEALDAL
                                                                                                                                                                                                                                                   -- VAATNAHLKDAFIKAL
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30.0%;
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PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Comple
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80; Conservative
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ip and
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MEDLINE=97349980; PubMed=9205837;
Yamamoto Y., Aiba H., Baba T., Hayashi K., Inada T., Isono K., Itoh T., Kimura S., Kitagawa M., Makino K., Miki T., Mitsuhashi N., Itoh T., Kimura S., Kitagawa M., Makamura Y., Nashimoto H., Mitsuhashi H., Nakade S., Nakamura Y., Nashimoto H., Oshima T., Oyama S., Saito N., Sampei G., Satoh Y., Sivasundaram S., Tagami H., Takeda J., Takemoto K., Uehara K., Wada C., Yamagata S., Horiuchi T.;
"Construction of a contiguous 874-kb sequence of the Esc. erichia collabonae corresponding to 50.0-68.8 min on the linkage map and analysis of its sequence features.";
DNA Res. 4:91-113(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=K12 / MC1655;
MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Maynew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J., Gregor J., Shao Y.;
      FTECA
                                                  :: : |
NY MMT
                             -YGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              suhB
                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=K12;
MEDLINE=90202735; PubMed=2138605;
Yano R., Nagai H., Shiba K., Yura T.;
"A mutation that enhances synthesis of sigma 32 and suppresses temperature-sensitive growth of the rpoH15 mutant of Escherichia
                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHÁRACTERIZATION.
MEDLINE=20213266; PubMed=10747806;
Chen L., Roberts M.F.;
"Overexpression, purification, and analysis of complementation behavior of E. coli SuhB protein: comparison with bacterial ancarchaeal inositol monophosphatases.";
Biochemistry 39:4145-4153(2000).
ELFTATRGQGAQLNGYRLRGSTARDLDGT1LATGFP--FKAKQYATTYINI1GKL
                                           SUHB_ECOLI STANDARD; PRT; 267 AA.

P22783; P77511;
01-AUG-1991 (Rel. 19, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 41, Last annotation update)
11-MAR-2002 (Rel. 41, Last annotation update)
11-MONOPHOSPHATASE (EC 3.1.3.25) (IMPase) (Inositol-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=95095968; PubMed=8002619;
Matsuhisa A., Suzuki N., Noda T., Shiba K.;
"Inositol monophosphatase activity from the Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mau B., Shao Y.;
"The complete genome sequence of Escherichia coli K-12.";
Science 277:1453-1474(1997).
                                                                                                                   --IVAGNPRVVKAMLANMR
                                                                                    310 AESRPTSFNVVAAGDARVHKEALDALR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteriol. 172:2124-2130(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteriol. 177:200-205(1995)
                                                                                                                                                                                                                                                                            phosphatase) (1-1-Pase).
SUHB OR SSYA OR B2533.
                                                                                                                                                                                                                                                                                                                                                                                 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FROM N.A.
                                                                                                                                                                                                                                                                                                          Escherichia coli
                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=562;
                                                                                                                240 GN--
                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78 LVEVAQRAADAAGEVI ... YFR--QRVELIDKEDHSPVTIAL (EAEEAMVSVILKSFPTHA 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IFGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELFTPTTROCCAULNGYRLEGSTARDLDGTHATGFP--FKAKOYATTYINIVGKLFNECA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KVPLYGCDCYAYALLASGEVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               subdivision; Vibrionaceae; Vibrio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ERWIGVOGKUT FLINGQETSVESONLLAQAYLYTTSPHLFEA-DAEDAFIRVRNKV----
                                                                             THE INOSITOL MONOPHOSPHATASE FAMILY
     H(2)0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAR-2002 (Rel. 41, Created)
01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 267
       +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proteome.
-> L (IN REF. 1).
8FEC3508BD111301 CRC64;
    1-monophosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 258; DB 1;
Pred. No. 4.7e-13;
1; Mismatches 1.
   Myo-inositol
                                                                                                                                                                                                                                                                 EMBL; M34828; AAA67506.1; -... EMBL; AE000339; AAC75586.1; -... EMBL; D90883; BAA16427.1; -... EMBL; D90884; BAA16435.1; -... PIR; A35158; A35158. HSSP; P29218; 2HHM. SWISS-2DPAGE; P22783; COL1. EcoGene; EG10983; suhb. InterPro; IPR000760; Inositol_P. Pfam; PF00459; inositol_P; 1... PRINTS; PR00378; INOSPHPHTASE. PROSITE; PS00629; IMP_1; 1... PROSITE; PS00630; IMP_2; 1... PROSITE; PS00630; IMP_2; 1...
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Complete
R
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              th
Similarity 29.6%;
79; Conservative 44
                                            SIMILARITY: BELONGS TO
CATALYTIC ACTIVITY: M
inositol + phosphate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria;
NCBI_TaxID=666;
                                 COFACTOR: Magnesium.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phosphatase) (1-1-Pase).
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141 14
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STRAIN=El Tor N16961
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CONFLICT
SEQUENCE
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Best Local S
Matches 79
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SEQUENCE
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Query Match
Best Local S
Matches 80
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                                         D.,
Sellers P.,
White O.,
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                                                                                 er J.C.,
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                                 A.,
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                                                                                                        sequence of both chromosomes of the cholera pathogen Vibrio
                                                                                                                 cholerae.";
Nature 406:477-483(2000).
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = r
inositol + phosphate.
-!- COFACTOR: Magnesium (By similarity).
-!- COFACTOR: Magnesium (By similarity).
-!- SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
MEDLINE=20406833; PubMed=10952301;
Heidelberg J.F., Eisen J.A., Nelson W.C., Clayton R.A., Gwinn Dodson R.J., Haft D.H., Hickey E.K., Peterson J.D., Umayam L., Gill S.R., Nelson K.E., Read T.D., Tettelin H., Richardson D. Ermolaeva M.D., Vamathevan J., Bass S., Qin H., Dragoi I., Se McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., Wh Salzberg S.L., Smith H.O., Colwell R.R., Mekalanos J.J., Vent(Fraser C.M.;
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01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Myo-inositol-1(or 4)-monophosphatase 1 (EC 3.1.3.25) (IMPase 1) (Inositol monophosphatase 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 267;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete proteome.
SEQUENCE 267 AA; 29088 MW; 88AD8CDF78A7AD87 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lycopersicon esculentum (Tomato).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 248; DB 1; I
Pred. No. 2.8e-12;
I; Mismatches 121;
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28.9%;
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Matches 79; Conser
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Eukaryota, V
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P54926;
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                                                                                                                                                                    by a multigene family.";
Plant Cell 7:2175-2185(1995).
-!- FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INOSITOL REQUIRED FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSITIDES.
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 - myo-inositol + phosphate.
-!- COFACTOR: REQUIRES MAGNESIUM (BY SIMILARITY).
-!- COFACTOR: REQUIRES MAGNESIUM (BY SIMILARITY).
-!- ENZYME REGULATION: INHIBITED BY LI(+).
                                                                                                                                                                encoded
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DQPILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYL----YTTSPHLFEADAEDAFIRV
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                                                                                                                                                                                                                                                                                                                                                                       PATHWAY.
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33;
                                                                                                                                                                   enzyme
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
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           Solanum
                                                                                                                                      K., Gruissem W.;
is a lithium-sensitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Multigene family.
92D1D532E359E0FD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
       Solanaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14.3%; Score 247.5; DB 1
28.9%; Pred. No. 3.2e-12;
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   Solanales;
                                                             SEQUENCE FROM N.A.
STRAIN-CV. VFNT CHERRY;
MEDLINE-96351935; PubMed-8718627
Gillaspy G.E., Keddie J.S., Od.,
"Plant inositol monophosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000760; Inositol_P
Pfam; PF00459; inositol_P; 1.
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PRINTS; PR00378; INOSPHPHTASE.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Lithium; ISEQUENCE 273 AA; 29558 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _2; 1.
Lithium;
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   Ι;
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Asteridae; euasterids
NCBI_TaxID=4081;
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SEQUENCE FROM N.A.
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Q9PAMO;
01-MAR-2002
01-MAR-2002
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                                                                                                                                            Nelson D.E
Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                             Hydrolase;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72;
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SUHB_XYLFA
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Matches
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                                                                                     STRAIN-CV. VFNT CHERRY;

MEDLINE-96351935; PubMed-8718627;

MEDLINE-96351935; PubMed-8718627;

Gillaspy G.E., Keddie J.S., Oda K., Gruissem W.;

Gillaspy G.E., Keddie J.S., Oda K., Gruissem W.;

Thant inositol monophosphatase is a lithium-sensitive encoded

Draint Cell 7:2175-2185(1995).

- I- FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INOSITOL REQUIRED

FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSITIDES.

- I- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = myo-inositol + phosphate.

- I- COFACTOR: REQUIRES MAGNESIUM (BY SIMILARITY).

- I- ENZYME REGULATION: INHIBITED BY LI(+).

- I- PATHWAY: KEY ENZYME OF THE PHOSPHATIDYL INOSITOL SIGNALING
                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RNKVK-VPLYGCDCYAYALLASGFVDIV--VESGLKPY: FLSLVPVIEGAGGSITDWRL:
                                                                                                                                                                                                                                                     LY
 Lycopersicon esculentum (Tomato).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheol
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
NCBI_TaxID=4081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ERLVEVAQRAADAAGEVLRKYFRQRVEIIDKEDHSPVTIADREAEEAMVSVILKSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IFGEENGWRCAENSADF -----VWVLDPIDGTKSFITGKPLFGTLIALLHNGKPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190 DQPILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYT---TSPHLFEADAEDAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE
                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Lithium; Multigene family.
SEQUENCE 265 AA; 28705 MW; 5369735F30FC884B CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 30.8%; Score 238; DB 1; Similarity 30.8%; Pred. No. 1.7e-11; 4; Conservative 46; Mismatches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
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IPRO00760; Inositol_P
                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00459; inositol_P; 1. PRINTS; PR00378; INOSPHPHTASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37, Created)
                                                                                                                                                                                                                                                                                                                                                             EMBL; U39443; AAB19029.1;
HSSP; P29218; 2HHM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                              FROM N.A
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049071;
15-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84;
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InterPro;
                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 84
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MYOP_MESCR
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                                                                                                                                                                                                                                                                                                                                                       ion D.E., Bohnert H.J.;

nitted (DEC-1997) to the EMBL/GenBank/DDBJ databases.

FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INOSITOL REQUIRED FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSITIDES.

CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 - myo-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               142
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                                                                                                                                                         Mesembryanthemum crystallinum (Common ice plant).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Caryophyllidae; Caryophyllales; Aizoaceae; Mesembryanthemum.

NCBI_TaxID=3544;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ဗှ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -FIRVRNKV
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                                                                                        (IMP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inositol + phosphate.

COFACTOR: REQUIRES MAGNESIUM (BY SIMILARITY).

ENZYME REGULATION: INHIBITED BY LI(+) (BY SIMILARITY).

PATHWAY: KEY ENZYME OF THE PHOSPHATIDYL INOSITOL SIGNALING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TO THE INOSITOL MONOPHOSPHATASE FAMILY
Last sequence update,
Last annotation update)
'...hatase (EC 3.1.3.25) (IMPase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 235; DB 1; Pred. No. 2.9e-11; Pred. No. 2.9e-11; Pred. Mismatches 115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GKQTTLNGQEISVRSCNLLAQAYLYTTSPHLFEADAEDA-
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(Rel. 41, Last sequence update)
(Rel. 41, Last annotation update)
                15-DEC-1998 (Rel. 37, Last sequence u
16-OCT-2001 (Rel. 40, Last annotation
Myo-inositol-1(or 4)-monophosphatase
(Inositol monophosphatase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro, IPR000760; Inositol_P
Pfam; PF00459; inositol_P; 1.
PRINTS; PR00378; INOSPHPHTASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35;
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270 AA; 29161 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13.6%;
larity 29.0%;
Conservative
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HSSP; P29218; 2HHM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: BELONGS
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                                                                                                                                                                                                                                                          A MEDLINE ZUL: 5.11; FUDDMEGRILO 34;

A MEDLINE ZUL: 5.11; FUDDMEGRILO 34;

A Alvarenga R., Alves L.M.C., Arvaya J.E., Baia G.S., Baptista C.S.,

A Alvarenga R., Alves L.M.C., Arvaya J.E., Baia G.S., Baptista C.S.,

A Alvarenga R., Alves L.M.C., Arvaya J.E., Baia G.S., Baptista C.S.,

B Barros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S.,

B Barros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S.,

B Barros M.H., Colombo C., Costa M.C.R., Cartaro D.M., Carter H.,

Collanto N.B., Colombo C., Costa M.C.R., Casta M.C.R., Casta-Neto C.M.,

R Coutinho L.L., Cristofani M., Dias-Neto E., Docena C., El-Dorry H.,

R Faga J.S., Franca S.C., Franco M.C., Frohme M., Furlan L.R.,

A Garnier M., Goldman G.H., Goldman M.H.S., Gomes S.L., Gruber A.,

HO P.L., Hoheisel J.D., Junqueira M.L., Kemp.r E.L., Kitajima J.,

Krieger J.E., Kuramae E.E., Laigret F., Lambais M.R., Leite L.C.C.,

Lemos E.G.M., Lemos M.V.F., Lopes S.R., Machado J.A.,

Machado M.A., Madeira A.M.B.N., Madeira H.M.F., Marino C.L.,

Manchado M.A., Madeira A.M.B.N., Matsukuma A.Y.,

Moon D.H., Nagai M.A., Nascimento A.L.T.O., Netto L.E.S.,

Moon D.H., Nagai M.A., Nascimento A.L.T.O., Netto L.E.S.,

Moon D.H., Nagai M.A., Nascimento A.L.T.O., Netto L.E.S.,

A G. Silveira J.F., Silvestri M.L.Z., Siqueira M.J., de Souza A.B.,

A G. Silveira J.F., Silvestri M.L.Z., Siqueira M.J., de Souza A.B.,

A G. Silveira J.F., Silvestri M.L.Z., Siqueira M.J., de Souza A.B.,

A Cago M.A., Zatz M., Meidanis J., Setubal J.C.;

"The genome sequence of the plant pathogen Xylella fastidiosa.";

"The genome sequence cof the plant pathogen Xylella fastidiosa.";

"The genome sequence of the plant pathogen Aylella fastidiosa.";

"The genome sequence of the plant pathogen bylella fastidiosa.";

"The genome sequence of the plant pathogen bylella fastidiosa.";

"The genome sequence of the plant pathogen bylella fastidiosa.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COFACTOR: Magnesium (By similarity).
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
                                                                                             Bacteria; Proteobacteria; gamma subdivision; Xanthomonas grou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrictuse by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-sib.or).
          (Inositol-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Myo-inositol 1-monophosphate + H(2)0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Magnesium; Complete proteome,
275 AA; 30233 MW; 74F622ACC4EE082C CRC64;
  3.1.3.25) (IMPase)
                                                                                                                                                                                                                      STRAIN=9a5c;
MEDLINE=203:5717; PubMed=10910347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR000760; Inositol_P.
Inositol-1-monophosphatase (EC phosphatase) (I-1-Pase).
SUHB OR XF2476.
Xylella fastidiosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inositol_P; 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATALYTIC ACTIVITY: M inositol + phosphate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00459; inositol.
PROSITE; PS00629; IMP_1
PROSITE; PS00630; IMP_2
                                                                                                                                                                                                  SEQUENCE FROM N.A
                                                                                                                                                _TaxID=2371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P29218;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hydrolase;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP;
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Query Match Best Local Similarity 28.4%; Pred. No. 3.6e-11; Matches 73; Conservative 51; Mismatches 117; Indels 16; Gaps 8;

79 VEVAQRAADAAGEVLRKYFR--QRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHAI 136

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

STRAIN=MSB8 / DSM 3109;

MEDLINE=99287316; PubMed=10360571;

MEDLINE=99287316; PubMed=10360571;

Melson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

Nelson K.E., Clayton R.A., Malek J.A., Linher K.D., Garrett M.M.,

McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,

A McDonald L., Utterback T.R., Malek J.A., Phillips C.A., Richardson D.,

RA Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,

RA Heidelberg J., Sutton G.G., Fleischmann R.D., Eisen J.A., White O.,

RA Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;

RA Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;

REVidence for lateral gene transfer between Archaea and Bacteria from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHARACTERIZATION.

MEDLINE=99437848; PubMed-10508089;

A MEDLINE=99437848; PubMed-10508089;

Chen L., Roberts M.F.;

Characterization of a tetrameric inositol monophosphatase from the hyperthermophilic bacterium Thermotoga maritima.";

L Appl. Environ. Microbiol. 65:4559-4567(1999).

-!- FUNCTION: Displays a 20-fold higher rate of hydrolysis of the D isoform of inositol 1-phosphate than of the L isoform.

-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = myo-inositol + phosphate.

-!- COFACTOR: Magnesium.

-!- SUBUNIT: Homotetramer.

-!- SUBUNIT: Homotetramer.

-!- SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.

-!- SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.

-!- STAMISHIFT IN POSITION 22.
        250
                                                                                          310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inulinase)
                                                                                  RWIGVDGKQTTLNGQEISVRSCNLLAQAYLYT-TSP-HLFEADAE----DAFIRVRNKVK
                          D SUHB_THEMA STANDARD; PRT; 256 AA.

C 033832;
T 15-DEC-1998 (Rel. 37, Created)
T 15-DEC-1998 (Rel. 37, Last sequence update)
T 01-MAR-2002 (Rel. 41, Last annotation update)
T 15-DEC-1998 (Rel. 41, Last annotation update)
T 01-MAR-2002 (Rel. 41, Last annotation update)
T 01-MAR-2002 (Rel. 41, Last annotation update)
T 01-MAR-2002 (Rel. 41, Last annotation update)
T Nositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
T Phosphatase) (I-1-Pase).
SUHB OR TM1415.
Thermotoga maritima.
Bacteria; Thermotogales; Thermotoga.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN=MSB8 / DSM 3109;
MEDLINE=98386670; PubMed=9720201;
Liebl W., Brem D., Gotschlich A.;
"Analysis of the gene for beta-fructosidase (invertase, inulinas the hyperthermophilic bacterium Thermotoga maritima, and characterisation of the enzyme expressed in Escherichia coli.";
Appl. Microbiol. Biotechnol. 50:55-64(1998).
                                                                                                                                                                          327
                                                                                                                                                                        ESRPTSFNVVAAGDARV
                                                                                                                                                                                                  239 DKGPESCQLV-AGNIKV
                                                                                                                                                                         311
                                                                                   251
 197
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                                                                                                                                                                                                                                                                                  RESULT
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STRAIN=MAFF303099;

MEDLINE=21082930; PubMed=11214968;

MEDLINE=21082930; PubMed=11214968;

Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A.,

Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M.,

Takeuchi C., Yamada M., Tabata S.;

"Complete genome structure of the nitrogen-fixing symbiotic bacteri
Mesorhizobium loti.";

DNA Res. 7:331-338(2000).

-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = myo-inositol + phosphate.

-!- COFACTOR: Magnesium (By similarity).

-!- SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            276 GLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVTAESRPTSFNVVAAGDARVHKEAL 332
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Last annotation update)
tase (EC 3.1.3.25) (IMPase) (Inositol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae
Phyllobacteriaceae; Mesorhizobium.
NCBI_TaxID=381;
                                                                                                                                                                                                                                                           Indels
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550c15FEEA50B8DC CRC64
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Pred. No. 7.3e-11;
; Mismatches 104
                                  ALT_FRAME
         EMBL; AJ001073; CAA04517.1; -.
EMBL; AE001794; AAD36486.1; ALT_F!
HSSP; P29218; 2HHM.
TIGR; TM1415; -.
InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PRINTS; PR00378; INOSPHPHTASE.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete prosecuence 256 AA; 28647 MW; 550
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Conservative 44;
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68; Conser
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Q98F59;
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01-MAR-2002
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843436E21ED326CF CRC64
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Pred. No. 1e-10;
7; Mismatches 128
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 EMBL; AP003003; BAB50708.1; -.
InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete presequence 266 AA; 28655 MW; 84
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illarity 28.3%;
Conservative 47
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AP003003; BAB50708.1
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Job time: 127 sec
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Matches 77
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Seconds ; Search time 52 Sec (without alignments) 3496.153 Million cell 22:58:06 2002, November 18, Run on:

updates/sec

492

aga

US-09-686-522C-13 score: Perfect

...agccaattttggngaag agctccgagcgtcattctcc..... Sequence:

IDENTITY\_NUC Gapop 10.0 , Scoring table

residues 184756068 328367 seqs, Searched

Gapext 1.0

656734 hits satisfying chosen parameters of otal number

seq length: 0 seq length: 2000000000 DB DB Maximum Minimum

Post-processing: Minimum Match 08 Maximum Match 1008 Listing first 45 summaries

Database

Published\_Applications\_NA:\*

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11: /cgn2\_6/ptodata/2/pubpna/US10\_NEW\_PUB.seq:\*

12: /cgn2\_6/ptodata/2/pubpna/US10\_PUBCOMB.seq:\*

13: /cgn2\_6/ptodata/2/pubpna/US10\_PUBCOMB.seq:\*

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### SUMMARIES

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ID	US-09-764-847-1336	-764-847-133	-878-574-25	-804-682-20	-804-682-	2-1	-45	-10-023-523-	A-1	S-09-887-576-64	-10-023-529-50	-10-023-523-5	0-253-	US-09-878-574-14649	US-10-023-529-48	23-4	4-998-3	-09-864-761-1	-864-761-1	
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RESULT 2
US-09-764-847-1335
; Sequence 1335, Application US/09764847
; Patent No. US20020132767A1
; GENERAL INFORMATION:
; APPLICANT: Rosen et al.

9	e 5509,	quence 16, App	equence 33, Ap	3 836, A	17, App	Sequence 17, Appl	4888,	27984,	equence 68, Ap	497. 4	Sequence 5091. Ap	3. App	20. App	Sequence 4421.	equence 22281	equence 417.	equence 496.	equence 314	quence 1. Apr	0 257B	equence 1043.	equence 5165,	guence 16. Ar	3882	, 2000 pompaho
S-09-864-761- S-09-864-761-	S-09-864-761-55	-10-095-407-16	S-09-804-682-33	S-09-974-300-	S-09-799-462A-1	-10-125-767-1	965-488	S-09-864-761-27	S-10-001-870-6	4-887-49	S-09-983-965-5	5-081-	-208-2	S-09-878-574-442	S-09-864-761-22	-833-790-417	S-09-764-887-49	S-09-967-768A	879-312-1	S-09-878-574-257	-09-834-975-104	US-09-960-352-5165	7-16	S-09-960-8	
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0.0002;
nes 71;
                   Sequence 1336, Application US/09764847

Patent No. US20020132767A1

GENERAL INFORMATION:

APPLICANT: Rosen et al.

TITLE OF INVENTION: Nucleic Acids, Proteins, and FILE REFERENCE: PC009

CURRENT APPLICATION NUMBER: US/09/764,847

CURRENT FILING DATE: 2001-01-17

Prior application data removed - consult PALM of NUMBER OF SEQ ID NOS: 2003

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 1336

LENGTH: 9953
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Pred. No. 0.00
0; Mismatches
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ilarity 58.2%;
Conservative
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CRGANISM: Homo sapiens
US-09-764-847-1336
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Best Local Similarity
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Sequence 2578, Application US/09878574

Patent No. US20020110548A1

GENERAL INFORMATION:

APPLICANT: Byrum, Joseph R.

APPLICANT: La Rosa, Thomas J.

APPLICANT: Thompson, Michael D.

TITLE OF INVENTION: Plants

FILE REFERENCE: 38-21(15401)8

CURRENT APPLICATION NUMBER: US/09/878,574

CURRENT FILING DATE: 2001-12-21

PRIOR APPLICATION NUMBER: 09/333,535

PRIOR FILING DATE: 1999-06-14

NUMBER OF SEQ ID NOS: 15775

SEQ ID NO 2578

LENGTH: 367
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); Mismatches 71;
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Pred. No. 0.00015;
); Mismatches 164;
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                                                    or
                                                  - consult PALM
TITLE OF INVENTION: Nucleic Acids, Proteins, FILE REFERENCE: PC009
CURRENT APPLICATION NUMBER: US/09/764,847
CURRENT FILING DATE: 2001-01-17
Prior application data removed - consult PALN NUMBER OF SEQ ID NOS: 2003
SOFTWARE: Patentin Ver. 2.0
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Similarity 58.2%;
99; Conservative
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ORHER INFORMATION: Clone ID:
US-09-878-574-2578
                                                                                                                  : ORGANISM: Homo sapiens
US-09-764-847-1335
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LENGTH: 11189
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US-09-18 4  
US-09-18 6  
US-09
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GAGCGGCTGGTGGAGGTGGCGCAACGGGCGGCGGACGCTGCTGGGGAGGTGCTCANGAAG
                GCCACCTCGCCCTTCCCCGGCCTCGCCAAACCCTAACCCCGGCTCTCGCCTCCTC
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800,
868,
962,
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ilarity 52.9%;
Conservative
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Homo
SEQ ID NO 12835
LENGTH: 437
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LOCATION: (1)
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Best Local S
Matches 101
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TYPE: DNA
ORGANISM:
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319,
378,
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743,
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, 1011, 1018
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681,
735,
847,
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, 1002, 1005,
             RESULT 5
US-09-804-682-29
Sequence 29, Application US/09804682
Sequence 29, Application US/09804682
GENERAL INFORMATION:
APPLICANT: Kinders, Robert
TITLE OF INVENTION: PAL-18 POLYPEPTIDES, NUCLEIC ACIDS
TITLE OF INVENTION: ENCODING THE SAME
FILE REFERENCE: 130001.406
CURRENT APPLICATION NUMBER: US/09/804,682
CURRENT FILING DATE: 2001-03-12
NUMBER OF SEQ ID NOS: 174
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                           209, 2
292,
363,
459,
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674,
734,
823,
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654,
731,
821,
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Pred. No. 0.00044;
0; Mismatches 88;
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Sequence 12835, Application US/09960352

Patent No. US20020137139A1

GENERAL INFORMATION:
APPLICANT: Warren, Wesley C.
APPLICANT: Tao, Nengbing
APPLICANT: Byatt, John C.
APPLICANT: Mathialagan, Nagappan
TITLE OF INVENTION: MUSCLEIC ACID AND OTHER MOLECU:
TITLE OF INVENTION: MUSCLE AND FAT DEPOSITION
FILE REFERENCE: 16511.006/37-21(10298)C
CURRENT APPLICATION NUMBER: US/09/960,352
CURRENT FILING DATE: 2001-09-24
NUMBER OF SEQ ID NOS: 15112
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282
355
458
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1001,
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354 ,
457 ,
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652,
725,
803,
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LOCATION: 235, 237, 238, 244, 245, 246, 25
LOCATION: 321, 323, 330, 334, 340, 349, 35
LOCATION: 397, 405, 432, 437, 454, 455, 45
OTHER INFORMATION: n = A,T,C or G
NAME/KEY: misc_feature
LOCATION: 583, 600, 611, 613, 623, 624, 65
LOCATION: 694, 701, 713, 716, 720, 721, 72
LOCATION: 744, 781, 782, 785, 789, 799, 80
OTHER INFORMATION: n = A,T,C or G
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                         'KEY: misc_feature
'ION: 858, 878, 884, 886, 896, 897,
ION: 957, 961, 965, 981, 991, 993,
ION: 1043, 1047, 1049, 1051, 1054,
'INFORMATION: n = A,T,C or G
-682-29
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Similarity 50.8%;
91; Conservative
                                                                                                                                                                                                             LENGTH: 1064
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                               feature
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NAME/KEY: misc
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Best Local
Matches 9
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TYPE: DN
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APPLICANT: Lees, Robert S.
APPLICANT: Lees, Simon W.
APPLICANT: Lees, Simon W.
APPLICANT: Lees, Anibal A.
TITLE OF INVENTION: NOVEL LOW DENSITY LIPOPROTEIN BINDING
TITLE OF INVENTION: ATHEROSCLEROSIS
TITLE OF INVENTION NUMBER: US 09/616,289
PRIOR FILING DATE: 1997-11 26
PRIOR APPLICATION NUMBER: US 60/048,547
PRIOR FILING DATE: 1996-11-27
PRIOR FILING DATE: 1997-06-03
WITHARR OF SEQ ID NOS: 53
WITHARR OF SEQ ID NOS: 53
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                                              55-LIB2809-007-01-E1-F4
                                                                                                    Score 52.4; DB 10;
Pred. No. 0.00073;
0; Mismatches 81;
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193;
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Pred. No. 0.00]
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 45, Application US/10023529
Patent No. US20020129388A1
GENERAL INFORMATION:
APPLICANT: Lees, Ann M.
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0
TYPE: DNA
CRGANISM: BOS taurus
COTHER INFORMATION: Clone ID:
US-09-960-352-12835
                                                                                                   ch 10.7%;
il Similarity 55.5%;
101; Conservative
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Local Similarity 49.2%;
hes 189; Conservative
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US-10-023-529-45
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SOFTWARE: FastSEQ for W
SEQ ID NO 45
LENGTH: 1614
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CCGCCACAGGGCCCCCTCGCCTGGCCCGGGGCAGCCGGGC-CCCCGCGCGCGCGGGCC
                                                TCGCCTCCGCAAACCCTAACCCCCGCTCTCGCCTCCGCCTCCGCCGCCGCCTCGCCCG
                                                                   TCGCCGCTGGGGGGGCCGGCCGGAGAGCTGCGGCAGTGGGGGAGTTGGCGAC-GGAGCGG
                                                                                                                                                                                                    CCGGAGGGGGGCGCGGGCGGCGCGCGCGCCGTGAGCCTGCGGGAAGTC
                                                                                                                TGTCGTCCGCGGTCTTGAGCGCGCGAGTGGCCCGATGAGTACGGTTAGGGCCTCGT
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Sequence 45, Application US/10023523

Patent No. US20020152485A1

GENERAL INFORMATION:

APPLICANT: Lees, Ann M.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Ann M.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Ann M.

APPLICANT: Lees, Robert S.

TITLE OF INVENTION: PROFILE NOWER: US/10/023,523

CURRENT APPLICATION NUMBER: US/09/616,289

PRIOR FILING DATE: 2000-07-14

PRIOR APPLICATION NUMBER: US 08/979,608

PRIOR APPLICATION NUMBER: US 08/979,608

PRIOR FILING DATE: 1997-11-26

PRIOR FILING DATE: 1997-11-26

PRIOR APPLICATION NUMBER: US 60/031,930

PRIOR FILING DATE: US 60/048,547

PRIOR APPLICATION NUMBER: US 60/048,547
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193;
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ilarity 49.2%;
Conservative
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; LOCATION: (1)...(1614)
US-10-023-523-45
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-10-023-523-45
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LENGTH: 1614
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hes 189;
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                                                                                                         TCGCCGCTGGGGCGGCCGGAGAGCTGCGGCAGTGGGGGAGTTGGCGAC-GGAGCGG
                                                                                                                           CCGGAGGGGGGCGCGCGGCGGCGCGCGCGGCCGGTGAGCCTGCGGGAAGTC
                                             TGTCGTCCGCGGTCTTGAGCGCGCGGGCCCCAGCCGATGAGTACGGTTAGGGCCTCGT
                                                                 CCCCGACATTTAAACCTTGCTCCCGACAACGGCGGCGGCGACTCCTCCCCAATGCTCTCCTC
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ches 112;
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Sequence 1691, Application US/09938842A

GENERAL INFORMATION:
APPLICANT: Harper, Jeff
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
TITLE OF INVENTION: STRESS'-REGULATED GENES OF PL
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US 60/227,866
PRIOR FILING DATE: 2001-08-24
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR FILING DATE: 2001-01-16
PRIOR SPECATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
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Pred. No. 0.00
0; Mismatches
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US-69-938-842A-1691
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Best Local Similarity 51.5%;
Matches 119; Conservative
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LENGTH: 2283
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SEQ ID NO 50
LENGTH: 12425
TYPE: DNA
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        APPLICANT: Brown, D.
APPLICANT: Chang, H.
APPLICANT: Zhu, T.
APPLICANT: Zhu, T.
APPLICANT: Wang, X.
APPLICANT: Wang, X.
APPLICANT: Wang, X.
APPLICANT: Cooper, Bret
TITLE OF INVENTION: Promoters for regulation of plant expression
FILE REFERENCE: 1360.0010S1
CURRENT APPLICATION NUMBER: US/09/887,576
CURRENT FILING DATE: 2001-06-25
PRIOR APPLICATION NUMBER: US 60/214,087
PRIOR FILING DATE: 2000-06-23
PRIOR FILING DATE: 2000-06-23
PRIOR FILING DATE: 2000-12-29
PRIOR FILING DATE: 2000-12-29
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URESULT 11

URESULT 11

Sequence 50. Application US/10023529

Sequence 50. Application US/10023529

Patent No. US20020129388A1

GENERAL INFORMATION:

APPLICANT: Lees, Ann M.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Ann M.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Robert S.

APPLICANT: Lees, Ann M.

APPLICANT: Arjona, Anibal A.

ITTLE OF INVENTION: NOVEL LOW DENSITY LIPOPROTEIN BINDING

ITTLE OF INVENTION: ATHEROSCLEROSIS

FILE REFEREN 3: 10797-004001

CURRENT APPLICATION NUMBER: US/10/023, 529

CURRENT FILING DATE: 2000-03-02

PRIOR FILING DATE: 2000-03-02

PRIOR FILING DATE: 2000-03-02

PRIOR FILING DATE: 1997-11-26

PRIOR FILING DATE: 1997-11-26

PRIOR APPLICATION NUMBER: US 60/031,930

PRIOR FILING DATE: 1996-11-27

PRIOR APPLICATION NUMBER: US 60/031,930

PRIOR FILING DATE: 1996-11-27

PRIOR APPLICATION NUMBER: US 60/048,547
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Pred. No. 0.0016;
0; Mismatches 112;
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FastSEQ for Windows Version 4.0
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TWARE: FastSEQ for Windows Version 4
ID NO 645
NGTH: 2283
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US-09-887-576-645
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Il Similarity 51.5%;
119; Conservative
Budworth,
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                                                        Length
                                                                                        Indels
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                                                      ore 51.8; DB 12; ed. No. 0.0025; Mismatches 193;
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US-10-023-523-50
Sequence 50, Application US/10023523
Patent No. US20020152485A1
GENERAL INFORMATION:
APPLICANT: Lees, Ann M.
APPLICANT: Lees, Ann M.
APPLICANT: Lees, Robert S.
APPLICANT: Law, Simon W.
APPLICANT: Arjona, Anibal A.
TITLE OF INVENTION: PROTEINS AND THEIR USE;
TITLE OF INVENTION: ATHEROSCLEROSIS
FILE REFERENCE: 10797-004001
CURRENT APPLICATION NUMBER: US/10/023,523
CURRENT FILING DATE: 2001-12-17
PRIOR APPLICATION NUMBER: US 09/517,849
PRIOR FILING DATE: 2000-07-14
PRIOR PRILING DATE: 2000-03-02
PRIOR FILING DATE: 1997-11-26
PRIOR FILING DATE: 1997-11-27
PRIOR APPLICATION NUMBER: US 60/031,930
PRIOR FILING DATE: 1997-06-03
MIMBER OF SEQ ID NOS: 53
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Pred.
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                                                   10.5%;
ilarity 49.2%;
Conservative
: ORGANISM: Homo sapiens
US-10-023-529-50
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                                                                     Similarity
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TH: 12425
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hes 189;
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Length 12425;

DB 12;

51.8;

Score

58;

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Score 49.8; DB 1U;
Pred. No. 0.0026;
                        WESULY 14
US-09-878-574-14649

US-09-878-574-14649

Sequence 14649, Application US/09878574

Patent No. US20020110548A1

GENERAL INFORMATION:

APPLICANT: Byrum, Joseph R.

APPLICANT: La Rosa, Thomas J.

APPLICANT: Thompson, Michael D.

TITLE OF INVENTION: Plants

FILE REFERENCE: 38-21(15401)B

CURRENT APPLICATION NUMBER: US/09/878,574

CURRENT APPLICATION NUMBER: 09/33,535

PRIOR FILING DATE: 1999-06-14

NUMBER OF SEQ ID NOS: 15775

SEQ ID NO 14649

LENGTH: 277

TYPE: DNA

ORGANISM: Glycine max

ORGANISM: Glycine max

US-09-878-574-14649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 48, Application US/10023529 Patent No. US20020129388A1 GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                 Similarity 59.1%;
1; Conservative
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-10-023-529-48
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LENGTH: 2561
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Best Local 3
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                                          CTCCGAGCGTCATTCTCCGCCCCGACATTTAAACCTTGCTCCCGACAACCGCCGCCGACT 62
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                                                          CCTCCCCAATGCTCTCCTCCTCCTCCACCCACTCGGCCACCTCGCCCTTCCCCGGCC
                                                                                                               TCGCCTCCGCAAACCCTAACCCCCGCTCTCGCCTCCGCCTCCGCGCCGCCTCGCCCCG
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                 Indels
0.0025;
ches 193;
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Pred. No. 0.0027;
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APPLICANT: Mohamath, Raodoh
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR T
TITLE OF INVENTION: AND DIAGNOSIS OF LUNG CANCER
FILE REFERENCE: 210121.556
CURRENT APPLICATION NUMBER: US/09/960,253
CURRENT FILING DATE: 2001-09-20
NUMBER OF SEQ ID NOS: 187
SOFTWARE: FastSEQ for Windows Version 4.0
  Pred. No. 0.00
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 176, Application US/09960253 Patent No. US20020123619A1 GENERAL INFORMATION:
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 of Similarity 49.2%; 189; Conservative
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ilarity 53.8%;
Conservative
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Best Local Similarity
Matches 128; Conser
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LENGTH: 5025
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            Matches
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and Other Molecules Associated
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APPLICANT: Leaw, Simon W.
APPLICANT: Law, Simon W.
APPLICANT: Law, Simon W.
APPLICANT: Law, Simon W.
APPLICANT: Law, Simon W.
APPLICANT: Arjona, Anibal A.
TITLE OF INVENTION: NOVEL LOW DENSITY LIPOPROTEIN BINDING
TITLE OF INVENTION: ATHEROSCLEROSIS
FILE REFERENCE: 10797-004001
CURRENT APPLICATION NUMBER: US/10/023,529
CURRENT FILING DATE: 2001-12-17
PRIOR APPLICATION NUMBER: US 09/517,849
PRIOR FILING DATE: 2000-03-02
PRIOR FILING DATE: 2000-03-02
PRIOR FILING DATE: 1997-11-26
PRIOR FILING DATE: 1997-11-26
PRIOR FILING DATE: 1996-11-27
PRIOR FILING DATE: 1996-11-27
PRIOR FILING DATE: 1996-11-27
PRIOR FILING DATE: 1996-11-27
PRIOR FILING DATE: 1997-06-03
NUMBER OF SEQ ID NOS: 53
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 277
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2;
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                                                                                                            Gaps
                          Length 256
                                        Indels
                          Score 49.8; DB 12;
Pred. No. 0.0048;
0; Mismatches 142;
                         Query Match
Best Local Similarity 52.1%;
Matches 158; Conservative
; NAME/KEY: CDS
; LOCATION: (246)...(1895)
US-10-023-529-48
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Search completed: November 19, 2002, 00:27:47 Job time : 87 secs

990 GCG 992

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GenCore version 5.1.3 (c) 1993 - 2002 Compugen Ltd.
                  Copyright
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sw model using nucleic search, 1 OM nucleic

19:29:19 2002, November 18, Run on:

; Search time 2102 Seconds (without alignments) 3790.761 Million cell updates/sec

492 US-09-686-522C-13 492 1 agctccgagcgtcattctcc.....agccaattttggngaaga

Title: Perfect score: Sequence:

Gapext 1.0 IDENTITY\_NUC Gapop 10.0 , Scoring table:

16154066 seqs, 8097743376 residues Searched:

32308132 hits satisfying chosen parameters: of otal number

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

EST:\* Database

em\_estba:\*
em\_esthum:\*
em\_estin:\*
em\_estov:\*
em\_estpl:\*
em\_estpl:\*
em\_estpl:\*
gb\_est2:\*
gb\_est2:\*
gb\_est3:\*
gb\_est3:\*
gb\_est4:\*
gb\_est5:\*
em\_estfun:\*
em\_estfun:\*
em\_gss\_hum:\*
em\_gss\_inv:\*
em\_gss\_lnv:\*
em\_gss\_vrt:\*
em\_gss\_vrt:\*
em\_gss\_vrt:\*
em\_gss\_vrt:\*

em\_gss\_mus:\*
em\_gss\_other:\*
em\_gss\_pro:\*
em\_gss\_rod:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			Description		BG103856 RHIZ2 37	RHT22 2			HVSME	EBro08	
SUMMARIES			ΙD	1	BG103856	BG053327	BQ240879	BI778441	BI951067	BM370373	
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				t t	505	533	444	588	863	598	
	фP	Query	Match	) )	60.4	60.4	36.0	35.8	35.6	34.8	
			Score		/67	297	177.2	176		171.2	
		Result	No.		-₁	7	en	4	2	9	

AU093884 AU093884 BE418829 SCL081.H0 RF631396 HVSMFb001	Q467759 HS04M21r	E498543 WHE0971	1959675 HVSMEn00	G414965 HVSMEK00	801093 WHE2810_	608457 BRY_436	443955 WHE1123_	157536 ENTRL88	157536 ENTRL88T	120461 F015P69	527020 AV52702	551269 AV55126	39852 AU239852	428639 WHE1411_	641140 Cr12 2 G	043467 Pan trog	197686 SP 1035	043613 Pan trog	197686 SP 1035	059666 Drosophi	069498 AGENCOUR	556419 AGENCOUR	043473 Pan trog	7969 BNLGH1984	809732 AGENCOUR	254057 SALK_01	094569 san48h09	551294 sad99q06	972349 sag90c1	731926 sai86e0	524744 sal19c0	238817 sab53e0	760124 s158d05.	L063912 Drosophi	L247391 Tetrao	L066880 Drosophi
AU093884 BE418829 BF631396	046775	E49854	195967	G41496	80109	060845	E44395	H15753	H15753	112046	V52702	V55126	239852	F42863	E64114	304346	219768	304361	Z19768	NSOOCS	206949	M55641	304347	3422	M80973	H25405	209456	365129	197234	473192	M52474	G23881	76012	0039	SOBJV	NS0076
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# ALIGNMENTS

RESULT 1 BG103856	
TOCUS	BG103856 EST 30-JAN-2001
DEFINITION	RHIZ2_37_F05.bl_A003 Rhizome2 (RHIZ2) Sorghum propinguum cDNA, mRNA
ACCESSION	BG103856
VERSION	BG103856.1 GI:12618689
KEYWORDS	EST.
SOURCE	Sorghum propinguum.
ORGANISM	Sorghum propinguum
	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
	Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae: PACC
	clade; Panicoideae; Andropogoneae; Sorghum.
REFERENCE	1 (bases 1 to 505)
AUTHORS	Cordonnier-Pratt, MM., Gingle, A., Paterson, A., Sudman, M. and Pratt
TITLE	An EST database from Sorghum: Sorghum propinguum rhizomes
JOURNAL	Unpublished (2000)
COMMENT	Contact: Cordonnier-Pratt MM
	Laboratory for Genomics and Bioinformatics
	Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
	Fax: 706 583 0210
	Email: mmpratt@uga.edu
	Seq primer: JEN REV
	High quality sequence stop: 495
ţ	I'OLYA=No.

Location/Qualifiers

FEATURES

Tue

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Triticum aestivum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae
; Triticeae; Triticum.
1 (bases 1 to 444)
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TaE05011G09R TaE05 Triticum aestivum cDNA clone TaE05011G09R, mRNA
           /organism="Sorghum propinguum"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/rlone_lib="Rhizomes; Vector: pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                    CAGCGGGTTGAGATCATCGACAAAGAGGACCACAGTCCTGTTACAATTGCAGATAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequences generated with forward primer
                                                                                                                                                   Length 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cloutier, S.
Wheat functional genomics - Glenlea developing seeds Unpublished (2002)
Contact: Dr. Sylvie Cloutier
Cereal Research Centre, Agriculture and Agri-food Car 195 Dafoe Rd, Winnipeg, MB, Canada R3T 2M9
Tel: (204) 983-2340
Fax: (204) 983-4604
Email: scloutier@em.agr.ca
was cloned directionally, not all sequences generated
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Pred. No. 4.6e-50;
); Mismatches 38;
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primer were from the 5' end (same
Average insert size is >2.0 kb
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primer: M13 Reverse
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LOCUS
DEFINITION
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AUTHORS
TITLE
JOURNAL
COMMENT
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KEYWORDS
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ZAP II.
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RHIZ2_26_A12.bl_A003 Rhizome2 (RHIZ2) Sorghum propinguum cDNA, mRNA sequence.
BG053327
BG053327.1 GI:12508897
EST.
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ceae; PACC
                                                                                          excision.
                                                                                                                                                                                              GCCTCCGCAAACCCTAACCCCGCTCTCGCCTCCGCCTCCGCGCCGCCTCGCCCGTG 184
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Trache

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Poaceae;

Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;

clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 533)

Cordonnier-Pratt, M.-M., Gingle, A., Paterson, A., Sudman, M. a
                                                                                                                                                                                                                                                                                                      | | | |
                                                                                                                                                                                                                                                                                                                                                               SCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                            TCGTCCGCGGTCTTGAGCGCGAGTGGGCGCCGATGAGTACGGTTAGGGCCTCGTTC
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                                                                                                                                                                                                                                                                                                                                                                                                              CAGCGGGTTGAGATCATCGACAAAGAGGACCACAGTCCTGTTACAATTGCAGATAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      An Esf database from Sorghum: Sorgnum propinguum rhizomes Unpublished (2000)
Contact: Cordonnier-Pratt MM
Laboratory for Genomics and Bioinformatics
The University of Georgia, Department of Plant Biology
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271,
Tel: 706 583 0210
                                                                                                                                                                          ٠.
   /organism="Sorghum propinguum"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizomes; Vector: pBluescript I
Zap II; Site_1: XhoI; Site_2: EcoRI; The libr
from poly-A RNA in the cloning vector lambda
clones to be sequenced were prepared by mass
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                                                                                                                                                                                                                                                                                                                                                                          505;
                                                                                                                                                                        Indels
                                                                                                                                             Length
                                                                                                                                           Score 297; DB 12;
Pred. No. 4.5e-50;
); Mismatches 38;
1. .oco
/organism="Sorghum
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: mmpratt@uga.edu
Seq primer: JEN REV
High quality sequence stop:
POLYA-No.
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                                                                                                                                         Query Match
Best Local Similarity 89.4%;
Matches 329; Conservative
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AUTHORS
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Gaps

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with reverse and 3' end).

librari

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Canada

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Email: est@scri.sari.ac.uk
All sequence has a Phred qu
Seq primer: Ml3 reverse.
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Best Local Similarity 66.7%;
Matches 318; Conservative
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                                                                                                                                                                                444;
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Hordeum vulgare.

Hordeum vulgare.

Hordeum vulgare

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tris

Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poace;

Triticeae; Hordeum.

I (bases 1 to 588)

Hedley, P., Liu, H., Caldwell, D., McCallum, N., Mudie, S., (Ramsay, L., Machray, G., Marshall, D.F.M. and Waugh, R.

Development of Barley Transcriptome Resources
Unpublished (2001)

On Sep 26, 2001 this sequence version replaced gi:15781:
Contact: Waugh R, Marshall DF

Genome Dynamics/Computational Biology
Scottish Crop Research Institute
Invergowrie, Dundee, DD2 5DA, Scotland, UK

Tel: 00 44 1382 562731

Fax: 00 44 1382 562426
                                                                 /tissue_type="developing seeds"
/dev_stage="5 days after anthesis"
/lab_host="E. coli DH10B"
/note="Vector: pSPORT-P (Invitrogen TechnologNotI; Site_2: MluI; mRNA obtained from wheat cultivar Glenlea 5 days post-anthesis"
141 c 146 g 81 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BI778441
EBro07_SQ003_F02_R root, 3 week, reduced light, cv Op1
Hordeum vulgare cDNA clone EBro07_SQ003_F02 5', mRNA sBI778441
BI778441.2 GI:21950120
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                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                              DB 14;
                                                                                                                                                                                                       116;
                                                                                                                                                                            36.0%; Score 177.2; DB 1. larity 69.1%; Pred. No. 5.5e-26; Conservative 0; Mismatches 116
         /organism="Triticum aestivum
                  /cultivar="Glenlea"
/db_xref="taxon:4565"
/clone="TaE05011G09R"
/clone_lib="TaE05"
                                                                                                                                                                                          Similarity
                                                                                                                                                                                                    288;
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                                                                                                                                                                                         Local
source
                                                                                                                                            BASE COUNT
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AUTHORS
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JOURNAL
COMMENT
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/organism="Hordeum vulgare"
/cultivar="Optic"
/db_xref="taxon:4513"
/clone="EBro07_SQ003_F02"
/clone_lib="root, 3 week, reduced light, cv Optic, EBro07"
/tissue_type="root"
/tissue_type="root"
/dev_stage="3 week"
/lab_host="DH10B"
/note="Vector: pSPORT1; Site_1: Sal I; Site_2: Not I;
Non-normalised library, directionally cloned into pSPORT1.
Derived from shoot and root material of 3 week old
etiolated barley plants. Developed as part of the barley transcriptome resources of BBSRC/SEERAD funded cereal IGF
(Investigating Gene Function) project."
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Hordeum vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae
; Triticeae; Hordeum.
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clone HVSME10024E07f,
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                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCCACCCACTCGGCCACCTCGCCCTTCCCCGGCCTCGCCTCCGCAAACCCTAACCCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CICCACCATCCCACCTTTCCCCTTCCCCACCCTTCACAAACCTAGCTTCCC
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                                                                                                                                                                                                                                                                                                                                                                                                           17;
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    over
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  20
   of
                                                                                                                                                                                                                                                                                                                                                                     Score 176; DB 13;
Pred. No. 9.7e-26;
; Mismatches 142;
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HVSME10024E07f Hordeum vulgare spike EST
(Fusarium infected) Hordeum vulgare CDNA
   score
quality
                                  Location/Qualifier
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/organism="Hordeum vulgare"
/cultivar="Morex"
/cultivar="Morex"
/db_xref="taxon:4513"
/clone="HVSME10024E07f"
/clone="lb="Hordeum vulgare spike EST library HVcDNA0012
(Fusarium infected)"
/tissue_type="Spike"
/lab_host="TJC121"
/note="Vector: pBluescript SK(-); Site_1: EcoRI; Site_2:
XhoI; Plants were grown at the University of Minnesota in the GJ Muchlbauer lab; spikes were harvested and snap frozen at 0, 1, 2, 3, 4, 5, 6, and 8 days after Fusarium graminearum inoculation (Heinen). In the TJ Close lab at the University of California, Riverside, total RNA was prepared from each sample pool, equal quantities of all eight RNA pools were combined, poly(A) RNA was purified from the mixture, one primary unamplified cDNA library was made, and I million pfu were in vivo excised to give pBluescript SK(-) cDNA phagemids (Choi, Fenton, Malatrasi). Phagemids were plated and picked at the Clemson University Genomics Institute (CUGI) (Begum, Palmer, Frisch, Atkins and Wing). Flasmid DNA preparations, DNA sequence has been trimmed to remove vector sequence and contains a minimum of 100 bases of phred value 20 or
                                              Rambo, T.,
es, R. and Main
                                Heinen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
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                                                                                                                   resource
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'orders Also
                                                                                                Development of a genetically and physically anchored EST resourfor barley genomics: Fusarium infected Morex spike cDNA library Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    see Close TJ, Wing R, Kleinhofs A, Wise R (2001)
Genetically and physically anchored EST resources for
barley genomics. Barley Genetics Newsletter 31:29-30.
(http://wheat.pw.usda.gov/ggpages/bgn/31/cover.html)"
254 c 240 g 183 t 2 others
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                                Wise, R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      above. For more details on library preparation and sequence analysis see
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Ving R, Kleinhofs A, Wise R (20
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                         , Close, T.J., Kleinhofs, A.,
, Yu, Y., Henry, D., Palmer, M.
Malatrasi, M., Choi, D.W., Oa
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1.6(-25;
                                                                                                                                                                                                                                         29634, USA
                                                                                                                                                                    Contact: Wing RA
Clemson University Genomics Institute
Clemson University
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Mismatches
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High quality sequence stop: 575.
Location/Qualifiers
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1 (bases 1 to 863)
Wing, R., Muehlbauer, G.J.,
,S., Begum, D., Frisch, D.,
Simmons, J., Fenton, R.D.,
                                                                                                                                                                                                                                       clemson,
                                                                                                                                                                                                                                                                                                       rwing@clemson.edu
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Tel: 864 656 7288
Fax: 864 656 4293
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Hordeum vulgare.

SM Hordeum vulgare.

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Hordeum.

Triticeae; Hordeum.

Triticeae; Hordeum.

Triticeae; Hordeum.

Sequence; Hordeum.

Sequence; Hordeum.

Sequence; Hordeum.

Non Jan 10, 2002 this sequence version replaced gi:18113763.

Contact: Wander R. Marshall DF

Genome Dynamic./Computational Biology
Scottish Crop Research Institute
Invergowrie, Dundec, IDD2 5DA, Scotland, UK

Tel: 00 44 1382 562426

Email: est@scri.sari.ac.uk

All sequence has a Phred quality score of 20 or over

Loration/Qualifiers

Incetion/Qualifiers

Loration/Qualifiers

Loration/Qualifiers

//clone-"Ebro08.50004_A09"

//clone-"Ebro08.50004_A09"

//clone-"Ebro08"

//tiseue tyne="root; 3 week, drought-stressed, cv Optic, EBro08"

//tiseue tyne="root"
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cv Optic, EBro08
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/dev_stage="3 week"
/dev_stage="3 week"
/lab_host="DH10B"
/note="Vector: pSPORT1; Site_1: Sal I; Site_2: Not I;
/note="Vector: pSPORT1; Site_1: Not I;
/note="Vector: psport-psector: psport-psector: psector: psector
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EBro08_SQ004_A09_k root, 3 week, drought-stressed, cv Optic, E Hordeum vulgare cDNA clone EBro08_SQ004_A09 5', mRNA sequence. BM370373.2 GI:21951481
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 17 CTCCGCCCCGACATTTAAACCTTGCTCCCGACAACCGCCGCCGACTCCTCCCCAATGCTC
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Pred. No. 8.9e-25;
0; Mismatches 151;
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Mismatches 146;
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Winnipeg MT CANADA
Tel: 204 983 2340
Fax: 204 983 4604
Email: scloutier@em.agr.ca
International Triticeae EST Cooperative (I
http://wheat.pw.usda.gov/genome.
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 Pred 0; Mi
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               -CAACCICCACCATCCCACCTTTCCCCTTCCCCACCCCGCCTTCACAAA
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Oryza sativa (japonica cultivar-group)

Eukaryota; Viridiplantae; Streptophyta; Embryophy
Spermatophyta; Magnoliophyta; Liliopsida; Poales;
Ehrhartoideae; Oryzeae; Oryza.

(bases 1 to 483)
Sasaki, T. and Yamamoto, K.

Rice cDNA from panicle at flowering staye (2000)
Unpublished (2000)
Contact: Takuji Sasaki
National Institute of Agrobiological Resources
Rice Genome Research Program, Kannondai 2-1-2, Ts
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sequence.
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/cultivar="Nipponbare"
/db_xref="taxon:39947"
/clone="E1081"
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p) cDNA c
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Tel: 81-298-38-7441
Fax: 81-298-38-7468
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AU093884
AU093884.1 GI:88
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BE418829

BE418829

SCLO81.H04R990808 ITEC SCL Wheat Leaf Library Triticum aestivum CDNA clone SCLO81.H04, mRNA sequence.

BE418829

BE418829.1 GI:9416675

BE418829.1 GI:9416675

EST.

bread wheat.

Triticum aestivum

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Triticeae EST Cooperative (ITEC): Production of Expressed Sequence Tags for Species of the Triticeae

Lupublished (2000)

Contact: Cloutier S
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SCL Wheat Leaf Library Triticum aestivum
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/cultivar="Thatcher Lr1"
/db_xref="taxon:4565"
/clone="SCL081.H04"
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                                                                                                                                                                                                                                                                                                                                                              1 (2001)
2000 this sequence version replaced gi:118
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/tissue_type="young leaf"
/dev_stage="after 24 hour challenge with LR-
/note="Vector: Lambda ZAP; 1.0 Kbp average in 243 c 242 g 171 t 14 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BF631396

HVSMEb0015N03f Hordeum vulgare seedling shoot EST like HVcDNA0002 (Dehydration stress) Hordeum vulgare cDNA HVSMEb0015N03f, mRNA sequence.

BF631396.2 GI:13092082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wing, R., Close, T.J., Kleinhofs, A., Wise, R., Begum, D., Y., Henry, D., Palmer, M., Rambo, T., Simmons, J., Choi, R.D., Oates, R. and Main, D.
Development of a genetically and physically anchored for barley genomics: Morex drought-stressed seedling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hordeum vulgare.
Hordeum vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta;
Spermatophyta; Magnoliophyta; Lilio; sida; Poales; Poa
                                                                                          Length
                                                                                                                   Indels
                                                                                         DB 10;
                                                                                        Score 168.4; DB 10;
Pred. No. 3.3e-24;
0; Mismatches 141;
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Contact: Wing RA
Clemson University Genomics Institute
                                                   g
                                                                                       34.2%;
illarity 67.3%;
Conservative (
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Close, T.J.,
                                                                                                    Local Similarity
ses 329; Conserv
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AUTHORS
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F631396
LOCUS
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/tissue_lype="Seedling shoot"
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/note="Vector: lambdaZAP; Site_1: EcoR1; Site_2: Xho1;
Seeds were surface sterilized then germinated under axenic conditions in the dark at room temperature on filter paper with water, nystatin and cefotaxime in covered crystallization dishes. Five-day old seedlings were incubated at 90% RH for 24 hr. Shoots were then harvested, total RNA was prepared, poly(A) RNA was purified, one primary unamplified cDNA library was made, 600000 pfu were in vivo excised to give pBluescript SK(-) cDNA phagemids. These steps were performed in the TJ Close laboratory at the University of California, Riverside (Choi, Close, Fenton). Phagemids were plated and picked at the Clemson University Genomics Institute (CUGI) (Begum, Palmer, Frisch, Atkins and Wing). Plasmid DNA preparations, DNA sequencing and sequence analysis were performed at CUGI (Wing, Yu, Frisch, Henry, Simmons, Oates, Rambo, Main). The sequence has been trimmed to remove vector sequence and contains a minimum of 100 bases of phred value 20 or above the parameter of the paper of the parameter of the paper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence analysis see
http://www.genome.clemson.edu/projects/barley. To order
this clone see http://www.genome.clemson.edu/orders Also
see Close TJ, Wing R, Kleinhofs A, Wise R (2001)
Genetically and physically anchored EST resources for
barley genomics. Barley Genetics Newsletter 31:29-30.
(http://wheat.pw.usda.gov/ggpages/bgn/31/cover.html)"
177 c 242 g 182 t
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Pred. No. 1e-22;
); Mismatches 108;
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                                                                                                                                                                                                                                                                               /organism="Hordeum vulgare"
/cultivar="Morex"
/db_xref="taxon:4513"
/clone="HVSMEb0015N03f"
                                                                                                     Email: rwing@clemson.edu
Total hq bases = 565
Seq primer: AATTAACCCTCACTAAAGGG
                                                                                                                                                                                              quality sequence stop: 740 Location/Qualifiers
                               S_{C}
Clemson University
100 Jordan Hall, Clemson,
Tel: 864 656 7288
Fax: 864 656 4293
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us-09-686-522c-13

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GGAGA

AGGCAATGACTTCAGTCATACTGAAGAGCTTTCCTACTCATGCTGTTTTCGGCGA

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/note="Vector: pBluescript SK+; Site_1: EcoRI (5'-end of cDNA); Site_2: XhoI (3'-end of cDNA); Due to a cloning artefact caused by the kit, in most cases the EcoRI site is NOT present, as well as the EcoRIadapter used for cloning. To excise the insert, restriction sites upstream EcoRI should be used (e.g. BamHI, SalI,PStI). NOTE: Also due to the cloning system used Blue/white selection for recombinats is not 100% reliable."
3 a 94 c 161 g 95 t
                                      30-MAY-2002
mRNA
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ceae: Pooldeae
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sites upstream
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election for
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                                      r EST - PRIME,
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                                                                                                                                                                                                                                                                                                                                      Molecular Markers Group, Department Genbank
Institute of Plant Genetics and Crop Plant Research
Corrensstr. 3, 06466, Gatersleben, Germany
                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta
Spermatophyta; Magnoliophyta; Liliopsida; Poales; P
; Triticeae; Hordeum.
1 (bases 1 to 443)
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                                     bp mRNA linear
cDNA clone HS04M21 5-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 155.2; DB 14
Pred. No. 1.4e-21;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .443
/organism="Hordeum vulgare"
/cultivar="Barke"
/db_xref="taxon:4513"
/clone="HS04M21"
                                                                                                                                                                                                                                                                                        seeds
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                          Corrensstr. 3, 06466, Gatersleben
Tel: 039482-5522
Fax: 039482-5595
Email: stein@ipk-gatersleben.de
Insert Length: 443 Std Error: 0
Plate: 4 row: M column: 21
                                     443
                                                                                                                                                                                                                                                                          ,A.
Barley ESTs from germinating Unpublished (2002)
Contact: Stein Nils
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                     HS Hordeum vulgare
                                                                                                        GI:21275541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 74.6%;
Matches 220; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seq primer: Ml3rev.
                                                                                                                                          Hordeum vulgare
                                                                                                                                                               vulgare
                                                                    sequence.
BQ467759
BQ467759.1
EST.
                               BQ467759
HS04M21r
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                                                                                                                                                             Hordeum
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RESULT 10
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Triticum aestivum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae;
'Triticeae; Triticum.
I (bases 1 to 404)
S Anderson, O.D., Chao, S., Choi, D.W., Close, T.J., Fenton, R.D., Han, P.S., Hsia, C.C., Kang, Y., Lazo, G.R., Miller, R., Rausch, C.J.,
Seaton, C.L. and Tong, J.C.
The structure and function of the expressed portion of the wheat genomes - Pre-anthesis spike cDNA library
Unpublished (2000)
Contact: Olin Anderson
US Department of Agriculture, Agriculture Research Service, Pacific West Area, Western Regional Research Center
800 Buchanan Street, Albany, CA 94710, USA
Tel: 5105595818
Fax: 5105595818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Triticum aestivum"
/cultivar="Chinese Spring"
/db_xref="taxon:4565"
/db_xref="taxon:4565"
/clone="WHE0971_F05_K09"
/clone_lib="Wheat pre-anthesis spike cDNA library"
/tissue_lype="Spike before anthesis"
/dev_stage="Adult plant"
/lab_host.*E. coli SOLR"
/lab_host.*E. coli SOLR"
/note-"Vector: Lambda Uni-ZAP XR, excised phagemid;
Site_l: Ecokl; Site_2: XhoI; Plants were grown in the greenhouse. Whole spike with awns trimmed, white, green and yellow anther were collected and total RNA, and poly(A) RNA were prepared, a cDNA library was made, and the cDNA clones were in vivo excised to give pBluescript phagemids in the TJ Close lab (Choi, Close, Fenton) at the University of California, Riverside. Plasmid DNA preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                              04-AUG-2000
Triticum
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                                                                                                                        BE498543
WHE0971_F05_K09ZS Wheat pre-anthesis spike cDNA library aestivum cDNA clone WHE0971_F05_K09, mRNA sequence.
BE498543
BE498543.1 GI:9697160
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Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: oandersn@pw.usda.gov
Sequence have been trimmed to remove vector
uality sequence with phred score less than
a primer: Stratagene SK primer.
Location/Qualifiers
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Best Local S
Matches 183
                                                                                                                                            DEFINITION
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VERSION
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ORIGIN
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                                       CCTCCCCAATGCTCTCCTCTTCCTCCTCCACCCACTCGGCCACCTCGCCCTTCCCCGGCC
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                                                          CCCCTCCCAGATGCTTCCCCCAACCTCCACCATCCCACCTTTCCCCTTCCCCACC
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                                                                                                                          NGAAGTACTTCCGCCAGCGGGTTGAGATCATCGACAAAGAGGACCACAGTCCTGTTACAA
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/cultivar="Morex"
/db_xref="taxon:4513"
/clone="HVSMEk0004H12f"
        Mismatches
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      Conservative
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BG414965
BG414965.1
EST.
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    267;
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COMMENT
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BG414965
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/lab_host="TJC121"
/lab_host="TJC121"
/note="Vector: pBluescript SK(-); Site_1: EcoRI; Site_2:
XhoI; Plants were grown at Washington State University,
Pullman, WA in a greenhouse, the rachises were excised and
frozen in liquid nitrogen (Kleinhofs lab). In the TJ Close
lab at the University of California, Riverside total RNA
was prepared, poly(A) was purified, one primary
unamplified cDNA library was made, and 1 million pfu were
in vivo excised to give pBluescript SK(-) cDNA phagemids
(Chin). Phagemids were plated and picked at the Clemson
University Genomics Institute (CUGI) (Begum, Palmer,
Frisch, Atkins and Wing). Plasmid DNA preparations, DNA
sequencing and sequence analysis were performed at CUGI
(Wing, Yu, Frisch, Henry, Simmons, Rambo, Main). The
sequence has been trimmed to remove vector sequence and
contains a minimum of 100 bases of phred value 20 or
above. For more details on library preparation and
                                                                                                                                                                                                                                                                                                                                            Simmons
                                                                                                                       22-OCT-2001
                                                                                                                                                                                                                                                       Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooidea
                                                                                                        HVSMEn0020L21f Hordeum vulgare rachis EST library HVCDNA0015 (normal) Hordeum vulgare cDNA clone HVSMEn0020L21f, mRNA sequence. B1959675.1 GI:16310930
                                                                                                                                                                                                                                                                                                                                                                               resource
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sequence analysis see

http://www.genome.clemson.edu/projects/barley. To orde

this clone see http://www.genome.clemson.edu/orders Al

see Close TJ, Wing R, Kleinhofs A, Wise R (2001)

Genetically and physically anchored EST resources for

barley genomics. Barley Genetics Newsletter 31:29-30.

(http://wheat.pw.usda.gov/ggpages/bgn/31/cover.html)"

222 c 198 g 113 t 15 others
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                                                                                                                                                                                                                                                                                                                                            Rambo, T.,
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                                                                                                                                                                                                                                                                            Triticeae; Hordeum.

(bases 1 to 667)

Wing, R., Close, T.J., Kleinhofs, A., Wise, R., Chin, A., Frisch, D., Atkins, M., Yu, Y., Henr, D., Paln. 2r, M., Ran Development of a genetically and physically anchored for barley genomics: Morex rachis cDNA library Unpublished (2001)

Contact: Wing RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 667;
Score 145; DB 13;
Pred. No. 1.7e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Hordeum vulgare"
/cultivar="Morex"
/db_xref="taxon:4513"
/clone="HVSMEn0020L21f"
/clone_lib="Hordeum vulgare r
(normal)"
                                                                                                                                                                                                                                                                                                                                                                                                                                            Clemson University Genomics Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29634,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seq primer: AATTAACCCTCACTAAAGGG
High quality sequence stop: 542.
Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         Clemson University
100 Jordan Hall, Clemson,
Tel: 864 656 7288
Fax: 864 656 4293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: rwing@clemson.edu
Total hq bases = 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29.5%; 62.8%;
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                                                                                                                                                                                                                       Hordeum vulgare.
                                                                                                                                                                                                                                           vulgare
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EST.

Hordeum vulgare.

Hordeum vulgare.

Hordeum vulgare.

Hordeum vulgare.

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Manuoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Spermatophyta; Hordeum.

Triticua; Hordeum.

Triticua; Hordeum.

Hordeus; Hordeum.

Horden, D., Akhunov, E., Chin, A., Choi, D.W., Fenton, R.D., Klanian, V., Simons, J., Oseas, R. and Main, D., Akhunov, E., Chin, A., Choi, D.W., Frisch, D., Yu, Y., Henry, D., Palmer, M., Rambo, T., Simons, J., Oses, R. and Main, D.

Development of a genetically and physically anchored EST resource for barley genomics: Morex testa/pericarp cDNA library

Contact: Wing RA

Clemson University Genomics Institute

Clemson University

Iou Jordan Hall, Clemson, SC 29634, USA

Tel: 864 656 4293

Email: rwing@clemson.edu

Total hg bases = 255

Seq primer: AATTAACCCTAAAAGGG

High quality sequence stop: 439.

Location/Qualifiers

Location/Qualifiers
3;
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HVSMEk0004H12f Hordeum vulgare testa/pericarp EST library
HVcDNA0013 (normal) Hordeum vulgare cDNA clone HVSMEk0004H12f, mRNA
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ilarity 32.1%;
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                                                                      /note="Vector: lambdaZAP; Site_1: EcoRl; Site_2: Xhol; Plants were raised from seeds in a Controlled Environments plants were raised from seeds in a Controlled Environments growth chamber maintained in continuous light at 180C, and testa and pericarp were dissected from developing kernels at Washington State University, Pullman, WA (Kannangara, von Wetstein). Total RNA was prepared, poly(A) RNA was purified, one cDNA library was made, and 1 million pfu were in vivo excised to give pBluescript SK(-) cDNA phagemids in the TJ Close lab at the University of California, Riverside (Akhunov, Chin, Choi, Close, Fenton, Kianian, Otto, Simons, Zhang). Phagemids were plated and picked at the Clemson University Genomics Institute (CUGI) (Begum, Palmer, Frisch, Atkins and Wing). Plasmid DNA preparations, DNA sequencing and sequence analysis were performed at CUGI (Wing, Yu, Frisch, Henry, Simmons, Oates, Rambo, Main). The sequence has been trimmed to remove vector sequence and contains a minimum of 100 bases of phred value 20 or above. For more details on library preparation and sequence analysis see http://www.genome.clemson.edu/projects/barley. To order this clone see http://www.genome.clemson.edu/projects/barley. To order this clone see http://www.genome.clemson.edu/projects/barley. To barley genemics. Barley Genetics Newsletter 31:29-30. (http://wheat.pw.usda.gov/ggpages/bgn/31/cover.html)"
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1 (bases 1 to 759)
Anderson, O.D., Chao, S., Crossman, C., Dubcovsky, J., Echenique, V., Lazo, G.R., Pham, J., Rausch, C.J., Stamova, B., Wilson, C. and Woo, J. The structure and function of the expressed portion of the wheat genomes - Vernalized apex cDNA library from Triticum monococcum Unpublished (2002)
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Triticum monococcum cDNA clone WHE2810_C03_E06, mRNA 8
BQ801093
  vulgare testa/pericarp
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Pred. No. 7.3e-19;
); Mismatches 45;
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                                     /tissue_type="testa/pericarp"
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/clone_lib="Hordeum
HVcDNA0013 (normal)'
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llarity 79.5%;
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/tissue_type="Vernalized apex"
/dev_stage="One month old plants"
/dev_stage="One month old plants"
/dev_stage="Coli XLOLR"
/dab_host="E. coli XLOLR"
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
Site_1: EcoRI; Site_2: XhoI; One-month old plants were
subjected to vernalization treatment by placing them in
the cold room at 6 C, under 15hr light/9hr dark condition.
Total RNA was prepared from apex tissue extracted from
plants with no cold treatment; and from plants with 2-week
, 4-week and 6-week cold treatment separately. Equal
amount of total RNA was pooled from all four samples, a
cDNA library was made using pooled polyA RNA and cDNA
clones were in vivo excised at the University of
California, Davis (V. Echenique, B. Stamova, J. Dubcovsky
). Plasmid DNA preparations and DNA sequencing were
performed in the OD Anderson lab (all other authors)."
US Department of Agriculture, Agriculture Research Service, Pacific West Area, Western Regional Research Center 800 Buchanan Street, Albany, CA 94710, USA Tel: 5105595773 Fax: 5105595818 Email: oandersn@pw.usda.gov
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Triticum aestivum

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae;
; Triticeae; Triticum.
; Triticeae; Triticum.
1 (bases 1 to 745)
Clarke, B., Lambrecht, M. and Rhee, S.
Assessing the utility of Arabidopsis genomic information for interpreting wheat EST sequences
Unpublished (2002)
Contact: Lambrecht M
The Arabidopsis Information Resource
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BRY_4362 wheat EST endosperm library Triticum aestivum cDNA 5 mRNA sequence
BQ608457
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                                                                                                                                                                                    to remove vector sequence score less than 20
                                                                                                                                                                                                                                                                                                                   /organism="Triticum monococcum"
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Pred. No. 2.6e-11;
); Mismatches 31;
                                                                                                                                                 Email: oandersn@pw.usda.gov
Sequences have been trimmed to
quality sequence with phred sc
Seq primer: SK primer.
Location/Qualifiers
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and 12 DPA
                                                                                                                                                                                                                                                                     1; Gaps
   of Plant Biology
                                                                                                                                                                                                                          DB 14; Length 745;
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                                                                        1. .745
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/tissue_type="endosperm"
/dev_stage="developing endosperm tissue 8,
(days post anthesis)"
/note="Vector: Bluescript II SK(-)"
1 a 137 c 217 g 195 t 5 others
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                                                                                                                                                                         SK(-)"
5 others
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Carnegie Institution of Washington, Dept. c
260 Panama Street, Stanford, CA 94305, USA
Tel: 1 650 325 1521 x 251
Fax: 1 650 325 3748
Email: rhee@acoma.stanford.edu.
Location/Qualifiers
                                                                                                                                                                                                                       Score 115.2; DB 14;
Pred. No. 1.60-13;
0; Mismatches 26;
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0
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Best Local Similarity 83.8%;
Matches 140; Conservative
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Search completed: November 18, 2002, 20:55:28 Job time: 2122 secs

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GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.

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ran on :	November 19, 2002, 00:20:30 ; Search time 2718 Seconds (without alignments) 5268.058 Million cell updates/sec
Title: Perfect score: Sequence:	US-09-686-522C-13 492 1 agctccgagcgtcattctccagccaattttggngaagaga 492
Scoring table:	IDENTITY_NUC Gapop 10.0 , Gapext 1.0
Searched:	2054640 segs, 14551402878 residues
Total number of	hits satisfying chosen parameters: 4109280
Minimum DB seq Maximum DB seq	length: 0 length: 200000000
Post-processing	: Minimum Match 0% Maximum Match 100% Listing first 45 summaries
Database :	GenEmbl:*  19 bb ba:* 21 9b ba:* 31 9b ba:* 4 9b bon:* 5 9b ba:* 6 9b ba:* 6 9b ba:* 6 9b ba:* 7 9b ba:* 7 9b ba:* 8

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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	131704 bp DNA linear HTG 21-MAR-2002	tivar-group) chromosome 7 clone P0440B02,	NG IN PROGRESS ***, in ordered pieces.				Oryza sativa (japonica cultivar-group) (cultivar:Nipponbare) DNA,		tivar-group)	Streptophyta; Embryophyta; Tracheophyta;	Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;	/za.	
Ĺ	AP004313	Oryza sativa	*** SEQUENCING IN PROGRESS	AP004313	AP004313.1 GI:16874543	H	Oryza sativa (japonica cult	clone: P0440B02.	M Oryza sativa (japonica cultivar-group)	Eukaryota; Viridiplantae; S	Spermatophyta; Magnoliophyt	Ehrhartoideae; Oryzeae; Oryza.	
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E Submitted (07-NOV-2001) Takuji Sasaki, National Institutuo Burect Submitted (07-NOV-2001) Takuji Sasaki, National Institutuo Submitted (07-NOV-2001) Takuji Sasaki, National Institutuo Submitted (07-NOV-2001) Takuji Sasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp, URL:http://rgp.dna.affr
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/db_xref="taxon:39947"
/chromosome="7"
/clone="P0440B02"
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1 to 131704)
Matsumoto, T. and Yamamoto, K
Sasaki,T., Matsumoto,T. and Yamamoto,K
Oryza sativa nipponbare(GA3) genomic DI
clone:P0440B02
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Oryza sativa (japonica cultivar-group)
clone:OSJNBb0003E08.
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta;
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Tracheophyta

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submitted (15-MAY-2002) Takuji Sasaki, National Institute of
Agrobiological Sciences, Rice Genome Research Program; Kannondai
2-1-2, Tsukuba, Ibaraki 305-8602, Japan
(E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/,
Tel:81-298-38-7441, Fax:81-298-38-7468)
NOTE: It currently consists of 1 contigs. Gaps between the contigs
are represented as runs of N. The order of the pleces is believed
to be correct as given, however the sizes of the gaps between them
are based on estimates that have provided by the submitter. This
sequence will be replaced by the finished sequence as soon as it is
available and the accession number will be preserved.
* NoTE: This is a 'working draft' sequence.
* This sequence will be replaced
* by the finished sequence as soon as it is available and
* by the finished sequence as soon as it is available and
* the accession number will be preserved.

Location/Qualifiers

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                                                         Sasaki, T., Matsumoto, T. and Katayose, Y.
Oryza sativa nipponbare(GA3) genomic DNA, ch
clone:OSJNBb0003E08
Published Only in Database (2002)
2 (bases 1 to 161809)
Sasaki, T., Matsumoto, T. and Katayose, Y.
Direct Submission
Submitted (15-MAY-2002) Takuji Sasaki, Natic
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Ehrhartoideae; Oryzeae; Oryza.
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Pred. No. 4.4e-11;
); Mismatches 131
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/organism="Oryza sativa (
/cultivar="Nipponbare"
/db_xref="taxon:39947"
/chromosome="7"
/clone="OSJNBb0003E08"
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Rattus norvegicus clone Cl
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HTG; HTGS_PHASE1.
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15. I (bases I to 163381)
15. I (bases I to 163381)
15. I (bases I to 163381)
15. Amaratunge, H.C., Aee, J.R., Ayele, M., Banks, T., Babtrooks, S.L., Amaratunge, H.C., Aee, J.R., Ayele, M., Banks, T., Battaria, J., Benton, J., Binage, K., Blankenburg, K., Bonnin, D., Battaria, J., Bonde, S., Elacker, M., Brown, B., Brown, M., Bryant, N.P., Burder, C., Burch, P., Burkel, M., Bryant, N.P., Burkel, C., Barchon, M., Eryant, N.P., Carron, T.F., Carren, M., Cavazos, S.R., Chacko, J., Chavez, D., Chow, C., Coyel, M.D., Dathbrine, S.R., David, N.C., Coyel, M.D., Dathbrine, S.R., David, R., Dayer, M., Dathbrine, S.R., David, R., J., David, M., David, R., J., Lu, X., Luder, R., Lude, R., Marid, R., Marid, G., Marid, G., Marid, G., Marid, G., Marid, R., Marid, 
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TE: This is a 'working draft' sequence. It currently nsists of 85 contigs. The true order of the pieces
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Direct Submission

Submitted (19-JUL-2002) Human Genome Sequencing Center, of Molecular and Human Genetics, Baylor College of Medisor Plaza, Houston, TX 77030, USA

Center: Baylor College of Medicine

Center code: BCM
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-- Summary Statistics

ng vector: Plasmid;

y: Dye-terminator Big Dye: 100% of reg

program: Phrap; version 0.990329

s quality: 78315 bases at least Q40

s quality: 87206 bases at least Q30

s quality: 92805 bases at least Q30
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Contact: hgsc-help@bcm.tmc.edu
------ Project Information
                              Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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Worley, K.C.

Direct Submission

Submitted (16-JAN-2002) Human Genome Sequencing Center, Depared Molecular and Human Genetics, Baylor College of Medicine, Of Molecular and Houston, TX 77030, USA

Baylor Plaza, Houston, TX 77030, USA

(bases 1 to 177168)
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Direct Submission
Submitted (13-JUL-2002) Human Genome Sequencing Center, Departmented (13-JUL-2002) Human Genetics, Baylor College of Medicine, of Molecular and Human Genetics, Baylor College of Medicine, Baylor Plaza, Houston, TX 77030, USA
On Jul 12, 2002 this sequence version replaced gi:18701851.
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Rodentia; Sciurognathi; Muridae;
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HTG; HTGS_PHASE1.
Norway rat.
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Eukaryota; Metazoa; Chord
Mammalia; Eutheria; Roden
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* NOTE: This is a 'working draft' sequence. It currently consists of 67 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as truns of N, but the exact sizes of the gaps are unknown. This record will be updated with t'e finished sequence as soon as it is available and the accession.
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Project Inic.
oject name: GOQJ
Lone name: CH230-106E18
-- Summary Statistics
ng vector: Plasmid;
y: Dye-terminator Big Dye: 100% of reads
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Center: Baylor College of Medicine
Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
------- Project Information
Center project name: GOQJ
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Ruzny,D.W., Adama,C., Adio-Oduola,B., Ali-Osman,F.R., Allen,C.,

Alberooks,S.L., Amaratunge,H.C., Are,J.R., Ayele,W., Bonnin,D.,

Babraria,J., Bowie,S., Briever,M., Blankenburg,K., Bonnin,D.,

Bouck,J., Bowie,S., Briever,B., Burchli,K.L., Byrd,N.C.,

Carron,T.F., Carter,M., Cavazos,S.R., Chackon,J. Chavez,D.,

Chen,G., Chen,R., Chen, Z., Chowdhry, I., Christopoulos,C.,

Cleveland,C.D., Cox,C., Coyle,M.D., Dathorne,S.R., David,R.,

Davilan,M.L., Darger,H., Dugan,Rocha,S., Curbin,K.J.,

Bernhart,G., Edgar,D., Edwards,C.C., Elhaj,C., Escotto,M.,

Falls,T., Ferraguto,D., Flagg,N., Ford,J., Foster,P., Frantz,P.,

Gorrell,J.H., Guevara,W., Gunarathe,P., Hale,S., Hamilton,K.,

Harris,C., Harris,K., Harr,M., Haulsk,P., Hawes,A., Hernandez,J.,

Hernandez,O., Hodgson,A., Hogues,M., Holloway,C., Hollins,B.,

Harris,C., Harris,K., Harr,M., Haulsk,P., Hawes,A., Jackson,L.E.,

Jacobson,B., Jia,Y., Johnson,R., Hogues,M., Holloway,C., Hollins,B.,

Marisson,E., Kelly,S., Khan,U., King,L., Korrah,J., Lowis,L.,

Li,J., Li,Z., Lichtarge,O., Lideu,C., Liu,J., Liun,M., Loulseged,H.,

Massey,E., Mawhiney,E., McLeod,M.P., Meador,M., Meil,G., Merzker,M.,

Moyer,M., Nackerson,E., Worken,W., Shoombat,R., Meil,C., Man,J.,

Moser,M., Nadl,D., Newtson,J., Newtson,N., Nguyen,A., Moser,M., Nadl,D., Newtson,J., Noverkoon,J., Sodergran,E., Roylor,R., Park, Pa
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), *** SEQUENCING IN
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Direct Submission
Submitted (13-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Jul 12, 2002 this sequence version replaced gi:18701464.
                     Center, Department of Medicine, One
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Center: Baylor College of Medicine
Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu

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                                                                                                                                                                                                                     Center project name: GMWR
Center clone name: CH230-20C20
----- Summary Statistics
Sequencing vector: Plasmid;
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 97272 bases at least Q40
Consensus quality: 104545 bases at least Q30
Consensus quality: 110146 bases at least Q20
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Direct Submission

Submitted (19-F13-2002) Human Genome Sequencing of Molecular and Human Genetics, Baylor College of Molecular April 177030, USA
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Anderson, S., Baldwin, J., Barna, N., Bastien, V., Beda, F.,
Boguslavkiy, L., Boukhgalter, B., Brown, A., Burkett, G.,
Campopiano, A., Castle, A., Choepel, Y., Colangelo, M., Collins, S.,
Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J. S.,
Dodge, S., Domino, M., Doyle, M., Ferreira, P., Fitzhugh, W., Gage, D.,
Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L.,
Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L.,
Howland, J.C., Iliev, I., Johnson, R., Landers, T., Lehoczky, J.,
Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J.,
McMand, J., LaRocque, K., Lu, G., Locke, K., Macdonald, P., Marquis, N.,
McEdrim, J., Meneus, L., Mihova, T., Miranda, C., Mlenga, V., Morrow, J.,
Murphy, T., Naylor, J., Norman, C. H., O'Connor, T., O'Donnell, P.,
O'Neil, D., Ollvar, T.M., Ollver, J., Peterson, K., Plerre, N.,
Pisani, C., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D.,
Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talalmas, J.,
Tesfaye, S., Theodore, J., Tirrell, A., Traylin, Y.,
Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D.,
Young, G., Zainoun, J., Zimmer, A. and Zody, M.
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Homo sapiens chromosome 4 clone RP11-124H2 map 4, LOW-PASS SEQUENCE
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo,
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Birren, B., Linton, L., Nusbaum, C. and Lander, E.
Homo sapiens chromosome 4, clone RP11-124H2
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37202: contig c
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38272: contig of
38372: aan of
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39319: contig
39419: gap of
40476: gap of
41564: gap of
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44686: cont
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45745: cont
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55336: cont
55436: qap of
56366: cont
56466: qap of
57415: cont
57515: qap of
57515: qap of
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62739: c'
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60585: cc
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                              Research
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                                                                                                                sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is updated, the accession number will
      http://ftp.genome.washington.edu/RM/RepeatMasker.html
------ Genome Center
Center: Whitehead Institute/ MIT Center for Genom
                                             site: http://www-seq.wi.mit.edu
tact: sequence_submissions@genome.wi.mit.edu
----- Project Information
ter project name: L9871
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I (bases 1 to 158897)

Muzny,D.M., Adams,C., Adio-Oduola,B., Ali-osman,F.R., Allen,C.,
Alsbrooks,S.L., Amaratunge,H.C., Are,J.R., Ayele,M., Banks,T.,
Barbaria,J., Benton,J., Bimage,K., Blankenburg,K., Bonnin,D.,
Buock,J., Bowie,S., Brieva,M., Brown,E., Brown,M., Bryant,N.P.,
Buhay,C., Burch,P., Burkett,C., Burrell,K.L., Byrd,N.C.,
Carron,T.F., Carter,M., Cavazos,S.R., Chacko,J., Chavez,D.,
Chen,G., Chen,R., Chen,Z., Chowdhry,I., Christopoulos,C.,
Cleveland,C.D., Cox,C., Coyle,M.D., Dathorne,S.R., David,R.,
Davila,M.L., Davis,C., Davy-Carroll,L., Dederich,D.A.,
Delaney,K.R., Delgado,O., Denn,A.L., Ding,Y., Dinh,H.H.,
Douthwaite,K.J., Draper,H., Dugan-Rocha,S., Durbin,K.J.,
Earnhart,C., Edgar,D., Edwards,C.C., Elhaj,C., Escotto,M.,
Falls,T., Ferraguto,D., Flagg,N., Ford,J., Foster,P., Frantz,P.,
Gabisi,A., Gao,J., Garcia,A., Garner,T., Garza,N., Gill,R.,
Harris,C., Harris,K., Hart,M., Havlak,P., Haie,S., Hernandez,J.,
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*** SEQUENCING IN PROGRESS
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            contig of 967 bp in length of 970 bp in length contig of 970 bp in length
                                                                    contig of 1011 bp in length contig of 928 bp in length
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Pred. No. 0.00036;
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Baylor Plaza, Houston, 20.

Morley, K.C.

Worley, K.C.

Direct Submission

Submitted (24-JUL-2002) Human Genome Sequencing Center, Department Submitted (24-JUL-2002) Human Genetics, Baylor College of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, Baylor college of Medicine, One of Molecular and Human Genetics, O
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NOTE: This is a 'working draft' sequence. It currently consists of 56 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human Genome Sequencing Center, Department Genetics, Baylor College of Medicine, One TX 77030, USA
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Center clone name: CH230-247E4

Sequencing vector: Plasmid;
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 125365 bases at least Q40
Consensus quality: 129911 bases at least Q30
Consensus quality: 132859 bases at least Q20
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act: hgsc-help@bcm.tmc.edu
----- Project Information
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E 2 (bases 1 to 68330)

S Birren, B. Lintcon, L., Nusbaum, C., Lander, E., Ali, A., Allen, N., Anderson, S., Barna, N. Bastien, V., Bloom, T., Bouslavkiy, L., Boukhgalter, B., Brown, A., Calmarata, J., Campopiano, A., Chang, J., Cook, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Gord, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Hortcon, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Kamat, A., Karatas, A., Karatas, A., Karatas, A., Karatas, A., Karatas, A., Karatas, A., Marquis, N., Matthews, C., Landers, T., Lehoczky, J., Levine, R., Lindblad-Toh, K., Liu, G., MacLean, C., Macdonald, P., Major, J., Marquis, N., Matthews, C., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Norwa, T., Milonga, V., Murphy, T., Naylor, J., Nguyen, C., Nicol, R., O'Neil, D., O'Neil, D., O'Neil, D., O'Neil, D., O'Neil, D., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Stantos, S., Theodore, J., Sewan, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Stantos, N., Subramanian, A., Traigilio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W., J., Young, G., Direct, Submission

L. Submitted (25-MAR-2002) Whitehead In titlute/MIT Center for Genome Research, 320 Charles Street, Cambri ige, MA 02141, L.S.
Smit, A.F. A. & Green, P. (1996-1997)
Http://ftp.genome.washington.edu/RM/RepeatMasker.html
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Submitted (24-JUL-2002) Human Genome Sequencing Center, Departmer Submitted (24-JUL-2002) Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Jul 5, 2002 this sequence version replaced gi:21686820.

Center: Baylor College of Medicine Center code: BCM
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                                                                 NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html)
NOTE: This is a 'working draft' sequence. It currently consists of 63 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
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Consensus quality: 22258 bases at least Q30
Consensus quality: 25343 bases at least Q20
Estimated insert size: 26000; agarose-fp estimation
Estimated insert size: 94809; sum-of-contigs estimation
Quality coverage: 15.03 in Q20 bases; agarose-fp estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 68 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
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CTGGGGCGGCCGGAGAGCTGCGGCAGTGGGGGAGTTGGCCGACGGAGCGGCTGGTGG
                      Sequencing of Human Chromosome 16
Unpublished
2 (bases 1 to 101509)
DOE Joint Genome Institute.
Direct Submission
Submitted (30-MAR-2000) Production Sequencing Facility, DG Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 9, On Sep 26, 2000 this sequence version replaced g: 9090641
-----Genome Center
Center: Joint Genome Institute
Center Code: JGI
Web site: http://www.jgi.doe.gov
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Catarrhini; Hominidae;
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Homo sapiens chromosome 16 clone SEQUENCE, 68 unordered pieces.
AC027353.4 GI:10305180
HTG; HTGS_PHASE1; HTGS_DRAFT.
Homo sapiens.
Homo sapiens
Eukaryota; Metazoa; Chordata; Cr.
Mammalia; Eutheria; Primates; Ca.
1 (bases 1 to 101509)
DOE Joint Genome Institute.
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Unpublished
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                                                                                                                                                                                                                     Sequencing vector: Plasmid; Chemistry: Dye-terminator Big Dye: 100% of reads Assembly program: Phrap; version 0.990329 Consensus quality: 92473 bases at least Q40 Consensus quality: 98495 bases at least Q30 Consensus quality: 102505 bases at least Q20
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NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a 'working draft' sequence. It currently consists of 80 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                      Baylor Plaza, Houston, TX 77030, USA

3 (bases 1 to 174605)
Worley, K.C.
Direct Submission
Submitted (24-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                      Center, Department of Medicine, One
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On Jul 19, 2002 this sequence version replaced g1:20806257
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                                                                                                                                                                               Center: Baylor College of Medicine
Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
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Weinstock, G. and Gibbs, R. Direct Submission Unpublished
2 (bases 1 to 174605)
Worley, K.C.
Direct Submission
Submitted (16-MAY-2002) For Molecular and Human George
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Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
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                                 DB 2;
                                 ore 68.4; DB 2 ed. No. 0.0044; Mismatches 15
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***, 58 unordered pieces.
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87588:
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Mammalia, Eutheria,
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L. Unpublished

E. Chases I to 174031)

S. Worley, K.C.

Direct Submission

C. Submitted (15-APR-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Diaza
                                                                                                                                                                                                                                                                                                                                                                                  Submitted (18-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Jul 14, 2002 this sequence version replaced gi:20330629.
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Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 107398 bases at least 040
Consensus quality: 119658 bases at least 030
Consensus quality: 127269 bases at least 020
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Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
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Worley, K.C.
Direct Submission
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Gorrell, J. H., Guevara, W., Gunaratne, P., Hale, S., Hamilton, K.,
Harris, C., Harris, K., Hart, M., Havlak, P., Hawes, A., Hernandez, J.,
Hernandez, O., Hodgoson, A., Hogues, M., Holloway, C., Hollins, B.,
Jacobson, B., Jia, Y., Johnson, R., Jolivet, S., Hume, J., Jackson, L. E.,
Karlsson, E., Kelly, S., Khan, U., King, L., Korvah, J., Kovar, C.,
Kratovic, J., Kureshi, A., Landry, N., Leal, B., Lewis, L.C., Lewis, L.
Li, J., Li, Z., Lichtarge, O., Lieu, C., Liu, J., Liu, W., Loulseged, H.,
Lozado, R.J., Lu, X., Lucier, A., Martinale, R., Martinez, E.,
Massey, E., Mampua, P., Martin, R., Martinale, A., Martinez, E.,
Massey, E., Mampua, P., Martin, R., Madoor, M., Mei, G., Metzker, M.,
Miner, G., Miner, Z., Mitchell, T., Mohabbat, K., Morgan, M., Norkerson, E., Nwokenkoy, S., Oduh, M., Okwonu, G.,
Oragunye, N., Ovicdo, R., Pace, A., Pay, L.L., Quiles, M., Ren, Y.,
Rives, M., Nojas, A., Rojubokan, I., Rolfe, M., Ruiz, S., Savery, G.,
Sodergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H.,
Sutton, A., Svatek, A., Tabor, P., Tamerisa, A., Thomas, N., Thomas, S.,
Usman, K., Vasquez, L., Vera, V., Villalon, D., Vinson, R., Wang, O.,
Wang, S., Ward Moore, S., Warren, R., Washington, C., Watlington, S.,
Wulliams, G., Williamson, A., Wleczyk, R., Wooden, S., Worley, W.,
Williams, G., Williamson, A., Wleczyk, R., Wooden, S., Worley, R.,
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NOTE: This is a 'working draft' sequence. It currently consists of 37 contigs. The true order of the pieces is not known and their order in this sequence record is
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Submitted (13-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Jul 12, 2002 this sequence version replaced gi:18138919.

Center: Baylor College of Medicine
Center code: BCM
Web Site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
Contact: hgsc-help@bcm.tmc.edu
Center project Information
Center project Information
Center clone hame: GRUW
Center clone hame: GRUW
Center project thame: GRUW
Center project thamp; version 0.990329
Consensus quality: 35643 bases at least Q40
Consensus quality: 39014 bases at least Q20
Consensus quality: 41785 bases at least Q20
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1170: gap of unknown length
2678: contig of 1508 bp in length
2778: gap of unknown length
4068: contig of 1290 bp in length
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Submitted (12-JAN-2002) Human Genome Sequencing of Molecular and Human Genetics, Baylor College Baylor Plaza, Houston, TX 77030, USA
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Worley, K.C.
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Usmani, K., Vasquez, L., Vera, V., Villalon, D., Vinson, R., Wang, O.,
Wang, S., Ward-Moore, S., Warren, R., Washington, C., Watlington, S.,
Williams, G., Williamson, A., Wleczyk, R., Wooden, S., Worley, K.,
Wu, Y., Wu, Y. F., Zhou, J., Zorrilla, S., Nelson, D.,
Weinstock, G. and Gibbs, R.
Direct Submission
L Unpublished
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Direct Submission
L Submitted (09-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
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                                                                                                                                                                                                                                                            Worley, K.C.

Direct Submission

Submitted (23-JUL-2002) Human Genome Sequencing Center, I of Molecular and Human Genetics, Baylor College of Medic of Molecular and Human Genetics, Baylor College of Medic ne Center: Baylor College of Medic ne Center: Baylor College of Medic ne Center: Baylor College of Medic ne
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COMMENT

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## ALIGNMENTS

RESULT 1 AP004313/c LOCUS DEFINITION	AP004313 131704 bp DNA linear HTG 21-MAR-2002 Oryza sativa (japonica cultivar-group) chromosome 7 clone P0440B02,
ACCESSION VERSION	AP004313 AP004313 AP004313.1 GI:16874543
KEYWORDS SOURCE	H G G
ORGANISM	Oryza sativa (japonica cultivar-group) Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
REFERENCE	spermatopnyta; Magnoilopnyta; Lillopsida; Poales; Poaceae; Ehrhartoideae; Oryzeae; Oryza. 1

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Sasaki,T., Matsumoto,T. and Yamamoto,K.
Oryza sativa nipponbare(GA3) genomic DNA, chromosome 7, PAC clone:P0440B02
Published Only in Database (2001)
2 (bases 1 to 131704)
Sasaki,T., Matsumoto,T. and Yamamoto,K.
Direct Submission
Submitted (07-NOV-2001) Takuji Sasaki, National Institute of Agrobiological Sciences, Rice Genome Research Program; Kannond 2-1-2, Tsukuba, Ibaraki 305-8602, Japan (E-mail:tsasaki@nias.affrc.go.jp, URL:htup://rgp.dna.affrc.go.Tel:81-298-38-7441, Fax:81-298-38-7469)
NOTE: It currently consists of 1 contigs. Gaps between are represented as runs of N. The order of the pieces is belie to be correct as given, however the sizes of the gaps between are based on estimates that have provided by the submitter. The sequence will be replaced by the finished sequence as soon as available and the accession number will be preserved.
* NOTE: This is a 'working draft' sequence.
* This sequence will be replaced
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Oryza sativa (japonica cultivar-group)
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/cultivar="Nipponbare"
/db_xref="taxon:39947"
/chromosome="7"
/clone="P0440B02"
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      AUTHORS
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Sasaki,T., Matsumoto,T. and Katayose,Y.

Sasaki,T., Matsumoto,T. and Katayose,Y.

Direct Submission

Submitted (15-MAY-2002) Takuji Sasaki, National Institute of
Byrobiological Sciences, Rice Genome Research Program; Kannondai
2-1-2, Tsukuba, Ibaraki 305-8602, Japan

(E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/,
Tel:81-298-38-7441, Fax:81-298-38-7468)

NOTE: It currently consists of 1 contigs. Gaps between the contigs
are represented as runs of N. The order of the pieces is believed
to be correct as given, however the sizes of the gaps between them
are based on estimates that have provided by the submitter. This
sequence will be replaced by the finished sequence as soon as it is
available and the accession number will be preserved.

* NOTE: This is a 'working draft' sequence.

* This sequence will be replaced

* by the finished sequence as soon as it is available and

* the accession number will be preserved.

Location/Qualifiers
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    Liliopsida;
                                                           Sasaki,T., Matsumoto,T. and Katayose,Y.
Oryza sativa nipponbare(GA3) genomic DNA,
clone:OSJNBb0003E08
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85 unordered pieces.
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AC128230.1 GI:21908840
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Rattus norvegicus
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/db_xref="taxon:39947"
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Oryzeae; Oryza.
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/organism="Oryza
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NOTE: This is a 'working draft' sequence. It current
consists of 85 contigs. The true ord.: of the pieces
                                  Craniata; Vertebrata;
Sciurognathi; Muridae;
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Chemistry: Dye-terminator Big Dye: 100% on Assembly program: Phrap; version 0.990329
Consensus quality: 78315 bases at least Quencing quality: 87206 bases at least Quencing quality: 92805 bases at least Quencing quencing quality: 92805 bases at least Quencing quenci
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Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
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Center clone name:
Rattus norvegicus
Eukaryota; Metazoa;
Mammalia; Eutheria;
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Submitted (13-JUL-2002) Human Genome Sequencing Center, Depar
Submitted (13-JUL-2002) Human Genetics, Baylor College of Medicine,
of Molecular and Human Genetics, Baylor College of Medicine,
Baylor Plaza, Houston, TX 77030, USA
On Jul 12, 2002 this sequence version replaced gi:18701851.
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Submitted (16-JAN-2002) Human Genome Sequencing
of Molecular and Human Genetics, Baylor College
Baylor Plaza, Houston, TX 77030, USA
3 (bases 1 to 177168)
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Chemistry: Dye-terminator Big Dye: 1
Assembly program: Phrap; version 0.9
Consensus quality: 120304 bases at 1
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JOURNAL

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Baylor Plaza, Houston, TX 77030, USA
3 (bases 1 to 138467)
Worley, K.C.
Direct Submission
Submitted (13-JUL-2002) Human Genome Sequencing Center, Department Submitted (13-JUL-2002) Human Genetics, Baylor College of Medicine, One of Molecular and Human Genetics, Baylor College of Houston, TX 77030, USA
Baylor Plaza, Houston, TX 77030, USA
                                                                     Center, Department of Medicine, One
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html)
NOTE: This is a 'working draft' sequence. It currently consists of 59 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                       Baylor Plaza, Houston, TX 77030, USA
On Jul 12, 2002 this sequence version replaced gi:18701464
                                                                                                                                                                                                                                                                                                                                                                                                                 Center project name: GMWR
Center clone name: CH230-20C20
Center clone name: CH230-20C20
Sequencing vector: Plasmid;
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 97272 bases at least Q40
Consensus quality: 104545 bases at least Q30
Consensus quality: 110146 bases at least Q20
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Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
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Worley, K.C.
Direct Submission
Submitted (19-FEB-2002) F
of Molecular and Human Ge
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E 2 (bases 1 to 82815)

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Homo sapiens chromosome 4 clone RP11-124H2 map 4, LOW-PASS SEQUENCE SAMPLING.
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Submitted (21-APR-2000) Whitehead Institute/MIT Center for Genome Submitted (21-APR-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA All repeats were identified using RepeatMasker:

Smit, A.F.A. & Green, P. (1996-1997)
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo,
1 (bases 1 to 82815)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens chromosome 4, clone RP11-124H2
Unpublished
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Score 76.8; DB 2;
Pred. No. 0.00013;
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* sequencing reads that have not been assembled into
* contigs. Runs of N are used to separate the reads
* and the order in which they appear is completely
arbitrary. Low-pass sequence sampling is useful for
* identifying clones that may be gene-rich and allows
* overlap relationships among clones to be deduced.
* However, it should not be assumed that this clone
* will be sequenced to completion. In the event that
the record is updated, the accession number will
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                   Genom
                           Center code: WIBR
Web site: http://www-seq.wi.mit.edu
Contact: sequence_submissions@genome.wi.mit.edu
------ Project Information
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0.00036;
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Mismatches
                                                                                                                                                                                                                   Score 74.4;
Pred. No. 0
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68077: cont
                                      177: gap of 69147: cont
                                                                 70258; con+
                                                                                                                               36: gap of
72279: cont
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71286: con
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73317: con
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Mammalia; Eutheria;
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AC121439.2 GI:2132.
HTG; HTGS_PHASE1.
Rattus norvegicus.
Rattus norvegicus.
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AUTHORS
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NOTE: This is a 'working draft' sequence. It currently consists of 56 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
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Direct Submission

Submitted (24-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA

On Jun 4, 2002 this sequence version replaced gi:20976389.

Center: Baylor College of Medicine

Center: Center code: BCM

Center code: BCM
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Direct Submission

Submitted (18-MAY-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA

(bases 1 to 158897)
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Contact: hgsc-help@bcm.tmc.edu
Contact: hgsc-help@bcm.tmc.edu
Contact: hgsc-help@bcm.tmc.edu
Center project Information
Center project name: GXXP
Center clone name: CH230-247E4
Center clone name: CH230-247E4
Center clone name: CH230-247E4
Center clone name: Plasmid;
Chemistry: Dye-terminator Hig Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 125365 bases at least Q40
Consensus quality: 129911 bases at least Q30
Consensus quality: 132859 bases at least Q20
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HTG 25-MAR-2002
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Sciurognathi; Muridae; Murinae; Mu
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LOW-PASS
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of 8576
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Mus musculus clone RP23-467G14, LAC116109
AC116109.1 G1:19703220
HTG; HTGS_PHASE0.
Mus musculus.
Mus musculus
Eukaryota; Metazoa; Chordata; Crai
Mammalia; Eutheria; Rodentia; Scii
1 (bases 1 to 68330)
Birren, B., Linton, L., Nusbaum, C. a
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Mus musculus, clone RP23-467G14

Unpublished
2 (bases I to 68330)

Birren, B., Linton, L., Nusbaum, C., Lander, E., Ali, A., Allen, N., Anderson, S., Barna, N., Bastien, V., Bloom, T., Boguslavkiy, L., Burren, B., Linton, L., Nusbaum, C., Campopiano, A., Chang, J., Chasto, B., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Faro, S., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S. Ginds, S., Goyette, M., Graham, L., Grand-Plerre, N., Hagos, B., Horton, L., Hulme, W., Lilev, I., Grand-Plerre, N., Landers, T., Lehoczky, J., Levine, R., Lindplad-Toh, K., Liu, G., MacLean, C., Macdonald, P., Major, J., Marquis, N., Mathews, C., McCarthy, M., McBwan, P., Major, J., Marquis, N., Mathews, C., McCarthy, M., McBwan, P., Major, J., Maylor, J., Nguyen, C., Nicol, R., Murphy, T., Naylor, J., Nguyen, C., Nicol, R., Murphy, T., Naylor, J., Nguyen, C., Nicol, R., Seman, C., Setta, R., Sahtos, R., Schauer, S., Schupback, R., Senach, C., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N. Seaman, S., Severy, P., Spencer, B., Stange-Thomann, N., Yolel, R., Volel, R., Senach, P., Charles Street, Cambridge, MA 02141, USA
All repeats were identified using RepeatMasker: http://ftp.genome.washigton.edu/RM/RepeatMasker:html

Legenome Center
                                                                                                                                                                                                                                                    Rogov, P.,
Schupback, R.,
Stojanovic, N.
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the accession number will
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Contact: sequence_submissions@genome.wi.mit.edu
------ Project Information
Center project name: L22810
Center clone name: 467_G_14
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2 Muzny, D.M., Adams, C., Adio-Oduola, B., Ali-Osman, F.R., Allen, C., Albarocks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Bonnin, D., Barbaria, J., Benton, J., Binage, M., Brown, B., Bryant, N. P., Burber, S., Briever, M., Brown, E., Brown, M., Bryant, N. P., Burch, S., Briever, M., Brown, E., Brown, M., Bryant, N. P., Burch, S., Briever, M., Cavazos, S.R., Chackon, J., Chavez, D., Chen, R., Chen, R., Choughey, I., Christopoulos, C., Chen, R., Chen, R., Choughey, I., Christopoulos, C., Chen, R., Delgado, O., Denn, A.L., Ding, Y., Dinh, H. H., Delgado, O., Denn, A.L., Ding, Y., Dinh, H. H., Deldaney, K.R., Draper, H., Dugan Rocha, S., Durbin, K.J., Earnbart, C., Edgar, D., Edwards, C.C., Elbaj, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Earnbart, C., Edgar, D., Edwards, C.C., Elbaj, C., Barnhart, C., Edgar, D., Edwards, C.C., Elbaj, C., Durbin, K.J., Earnbart, C., Edgar, D., Carcia, A., Garner, T., Garza, M., Gill, R., Gorlell, J.H., Guevaraw, M., Ounarathe, P., Hale, S., Hanitton, K., Harrandez, O., Hodgeon, M., Hogues, M., Holloway, C., Hall, S., Hanitton, K., Harrandez, O., Hodgeon, A., Hogues, M., Holloway, C., Hame, J., Jackson, L.E., Jackbards, S., Huber, J., Hull, K., Hume, J., Jackson, L., Li, Z., Licharde, O., Lieu, C., Liu, J., Liu, W., Lucier, R., Marlins, E., Martin, R., Marlins, E., Martin, R., Marlins, E., Martin, R., Marlins, R., Marlins, E., Markin, W., Mapus, P., Martin, R., Marlins, E., Martin, R., Marlins, M., Mayus, M., Mayu
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Submitted (03-JUL-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Pavlor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Department
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Sciurognathi; Muridae; Murinae;
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Worley, K.C.
Direct Submission
Submitted (24-JUL-2002) Human Genome Sequencing Center, Depar Submitted (24-JUL-2002) Human Genetics, Baylor College of Medicine, of Molecular and Human Genetics, USA of Molecular, Houston, TX 77030, USA
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Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
Chordata;
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CH230-143P6

HTG 24-JUL-2002 IN PROGRESS

linear SEQUENCING

DNA

AC126076 117082 bp DIRACTUS norvegicus clone CH230-143P6,

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NOTE: This is a 'working draft' sequence. It currently consists of 63 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
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Consensus quality: 19476 bases at least 040
Consensus quality: 22258 bases at least 030
Consensus quality: 25343 bases at least 020
Consensus quality: 25343 bases at least 020
Estimated insert size: 26000; agarose-fp estimation
Estimated insert size: 94809; sum-of-contigs estimation
Quality coverage: 15.03 in 020 bases; sum-of-contigs estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 68 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
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                 CTGGGGCGCCGGCCGGAGAGCTGCGGCAGTGGGGGAGTTGGCGACGGAGCGGCTGGTGG
                                                                                                                                         Homo sapiens chromosome 16 clone RP11-167D21, WORKING SEQUENCE, 68 unordered pieces.
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Catarrhini; Hominidae;
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Center Project Name: 0
Center clone name: RPCI-11_167D21
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Mammalia; Eutheria; Primates;
1 (bases 1 to 101509)
DOE Joint Genome Institute.
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HTG; HTGS_PHASE1; HTGS_DRAFT
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*** SEQUENCING IN PROGRESS ***,
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Submitted (02-JUL-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
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Mammalia; Eutheria; Roder
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NOTE: This is a 'working draft' sequence. It currently consists of 63 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                        Department
                                                                     Center
of Mec
                                                                                                                                                                                                                                                                                                                     reads
                                                                                                                                                      Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
Contact: hgsc-help@bcm.tmc.edu
Contact: hgsc-help@bcm.tmc.edu
Center project Information
Center project name: GVRX
Center clone name: CH230-77F8
Center clone name: CH230-77F8
Center clone name: PH230-77F8
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Worley, K.C.
Direct Submission
Submitted (18-JUL-2002) Human Genome Sequencing
of Molecular and Human Genetics, Baylor College
of Molecular and Human Genetics, USA
Baylor Plaza, Houston, TX 77030, USA
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NOTE: This is a 'working draft' sequence. It currently consists of 58 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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' Nguyen, A., Ny...
uh, M., Okwuonu, G.,
'., Peery, J., Perez, L.,
., Quiles, M., Ren, Y.,
M., Ruiz, S., Savery, G.,
'N., Sisson, I.,
Stone, H.,
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Worley, K.C.
Direct Submission
Submitted (18-JUL-2002) Human Genome Sequencing Center,
of Molecular and Human Genetics, Baylor College of Medic
Baylor Plaza, Houston, TX 77030, USA
On Jul 14, 2002 this sequence version replaced gi:203306
Center: Baylor College of Medicine
Center code: BCM
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Genetics, Baylor College of Me
TX 77030, USA
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Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 10739% bases at least Q40
Consensus quality: 11965% bases at least Q30
Consensus quality: 127269 bases at least Q20
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Direct Submission
Submitted (15-APR-2002) H
of Molecular and Human Ge
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Muzny, D.M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T., Barbaria, J., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Burbaria, J., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Z., Chowdhry, I., Christopoulos, C., Chen, G., Chen, R., Chen, Z., Chowdhry, I., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Davy-Carroll, L., Dederich, D.A., Delaney, K.R., Delgado, O., Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., Earnhart, C., Edgar, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantz, P.,
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Worley, K.C.

Worley, K.C.

Direct Submission

L. Submitted (13-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA

On Jul 12, 2002 this sequence version replaced gi:18138919.

Center: Baylor College of Medicine
Center: Baylor College of Medicine
Center code: BCM

Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu

Contact: hgsc-help@bcm.tmc.edu

Contact: hgsc-help@bcm.tmc.edu
Gabisi, A., Gao, J., Garcia, A., Garner, T., Garza, N., Gill, R.,
Gorrell, J. H., Guevara, W., Gunaratne, P., Hale, S., Hamilton, K.,
Harris, C., Harris, K., Hart, M., Havlak, P., Hawes, A., Hernandez, J.,
Hernandez, O., Hodgson, A., Hogues, M., Holloway, C., Hollins, B.,
Jacobson, B., Jia, Y., Johnson, R., Jolivet, S., Joudah, S.,
Karlsson, E., Kelly, S., Khan, U., King, L., Korvah, J., Kovar, C.,
Li, J., Li, Z., Lichtarge, O., Liu, J., Liu, W., Loulseqed, H.,
Lozado, R. J., Lu, X., Lucier, R., Martin, R., Martinez, R.,
Mahsehwari, M., Mapua, P., Martin, R., Martin, R., Martinez, E.,
Massey, E., Mapua, P., Martin, T., Mohabbat, K., Morgan, M., Morris, S.,
Mosser, M., Neal, D., Newtson, J., Newtson, N., Nguyen, N.,
Nguyen, N., Olido, R., Pace, A., Payton, B., Peery, J., Perez, L.,
Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Ruiz, S., Savery, G.,
Scherer, S., Scott, G., Shen, H., Shooshtari, N., Sisson, I.,
Sutton, A., Svatek, A., Tabor, P., Tamerisa, R., Thomas, S.,
Usman, K., Vasquez, L., Vera, V., Villalon, D., Vinson, R., Wang, O.,
Walliams, G., Williamson, A., Warren, R., Washington, C., Watlington, S.,
Williams, G., Williamson, A., Wleczyk, R., Wooden, S., Worley, R.,
Usman, K., Wuy, Y. F., Zhou, J., Zorrilla, S., Nelson, D.,
Weinster, S., Basses, I., Chou, J., Zorrilla, S., Nelson, D.,
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Direct Submission

Submitted (12-JAN-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA

3 (bases 1 to 68787)
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NOTE: This is a 'working draft' sequence. It currently
consists of 37 contigs. The true order of the pieces
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Center clone name: CH230-137B1

Sequencing vector: Plasmid;
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329

Consensus quality: 35643 bases at least Q40

Consensus quality: 39014 bases at least Q30

Consensus quality: 41785 bases at least Q20
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1. (bases 1 to 130899)

1. Muzny, D.M., Adams, C., Adio-Oduola, B., Ali-osman, F.K., Allen, C., Alsbrooks, S.L., Andratunge, H.C., Arc, J.R., Ayele, M., Banks, T., Barbooks, S.L., Andratunge, H.C., Arc, J.R., Ayele, M., Banks, T., Bubrooks, S.L., Bounin, D., Burbooks, S.L., Brown, E., Brown, E., Bounin, D., Bunch, P., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J. Chavez, D., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D., Carron, C., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Coyle, M.D., Dathorne, S.R., David, R., Davis, C., Coyle, M.D., Dederich, D.A., Davida, M.L., Ding, Y., Durbin, K.J., Bannatt, C., Edgar, D., Edwards, C.C., Elhaj, C., Escotto, M., Falls, T., Ferraquto, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Gabist, A., Garcia, A., Garner, T., Garza, N., Gill, R., Harris, C., Harris, R., Mardus, M., Holloway, C., Hollins, B., Harris, C., Harris, M., Gunrathe, P., Hawes, A., Hernandez, O., Hodyson, A., Hodyes, M., Holloway, C., Hollins, B., Jacobson, B., Jia, Y., Johnson, R., Jolloway, C., Havis, L.C., Lewis, L.C., Lous, S., Lu, X., Lucier, R., Lucier, R., Lucier, R., Lune, R., Martina, E., Marsey, E., Marhiney, E., Martin, R., Martindale, A., Martinez, E., Massey, E., Mawhiney, E., Mcheol, M., Norgen, M., Norgen, M., Norgens, M., Nordedo, R., Norgen, M., Norgens, M., Nordedo, R., Peters, L., Olyano, R., Norgen, M., Nordedo, R., Peters, L., Olyano, R., Peters, L., Olyano, R., Norgen, M., Nordedo, R., Peters, L., Olyano, R., Norgen, M., Nordedo, R., Peters, L., Olyano, R., Peters, L., Olyano, R., Norgen, M., Nordedo, R., Peters, L., Olyano, R., Peters, L., Olyano, R., Peters, R., Peters, L., Peters, R., Peters, R., Peters, L., Dolyano, R., Peters, R., Peters, L., Dolyano, R., Peters, R., Roylano, F., Roylano, F., Ro
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Direct Submission
Unpublished
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                                                                                                                                                                                                                                                                                                                                                                                       Baylor Plaza, Houston, TX 77030, USA
On Jul 17, 2002 this sequence version replaced gi:217
                                                                                                                                                                                                 Worley, K.C.

Worley, K.C.

Direct Submission

Submitted (09-JUL-2002) Human Genome Sequencing Cen

of Molecular and Human Genetics, Baylor College of

Baylor Plaza, Houston, TX 77030, USA

3 (bases 1 to 130899)

Worley, K.C.

Direct Submission

L. Submitted (23-JUL-2002) Human Genome Sequencing Cer

of Molecular and Human Genetics, Baylor College of

navlor Plaza, Houston, TX 77030, USA

Pavlor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center project name: GBWP
Center clone name: CH230-6H4
Center clone name: CH230-6H4
Sequencing vector: Plasmid;
Chemistry: Dye-terminator Big Dye: 100% of rea
Assembly program: Phrap; version 0.990329
Consensus quality: 71039 bases at least Q40
Consensus quality: 77045 bases at least Q30
Consensus quality: 80907 bases at least Q20
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printed, Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being prand is derived by analysis of the total score distribution.

Description  Corn extragenic su Partial cDNA inser Assembled cDNA con HSV-2 strain SB5 C Oligonucleotide fo Oligonucleotide fo DNA encoding novel	SUMMARIES  ID AA229165 AA229167 AAV62176 ABQ52496 ABQ52497 AAS67812 AAX09011	DB 21 21 21 19 24 24 23 23	Y Length DB 492 27 1418 27 1103 27 100 24 60	% Ouery Match 99.4 99.4 14.0 12.0 12.0 11.9 11.9 11.9	Score 489 165.8 64.4 64.4 59.6 59	Result No. 1 2 2 3 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
Murine transcripti	AAA29007	21	1266	11.8	58.2	6
Brn-3a polynucleot	AAX09011	20	1266	11.8	58.2	80
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	SUMMARIES					

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Genomic sequence #	polynucle	se ischaemic	enc	Mouse ischaemic co	teria monocyto	ro-Pro-Pro	in th	man polynucleo	igonucleotide	Oligonucleotide fo	t	Primer used in the	Human polynucleoti		BamHI J-I fragment	DNA encoding Pseud	ner used	ST reg	Primer used in the	Human gene express	Human colon cancer	Φ	otide f	Human low density	densit	N. meningitidis pa	expre	n lung canc	Rice magnesium che	Brn-3a polynucleot	ų	Streptococcus poly	-derived D	Human immune/haema		
ABK4244 ABK4244	<b>AAI843</b>	AB19965	AAS6781	ABI9980	ABQ6845	ABL5182	AAA3818	AAI8450	ABQ1707	ABQ1707	AAZ7750	AAA3818	AAI8200	AAQ1021	AAQ1054	AAQ7350	AAA3818	AAQ7621	AAA3818	AA21677	AAA0159	ABQ3012	ABQ3012	AAH2649	<b>AAH2649</b>	AAA8180	AAZ1726	ABK7030	AAC8458	AAX0901	AAA2900	<b>ABN6964</b>	AAH2100	AAK8378	ALLGNMENTS	
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Clone cdt2c.pk003.b20; corn extragenic suppressor protein; phytic acid biosynthetic enzyme; transformation; chimeric gene; antibody; free phosphate; phytic acid level; transgenic plant; enzyme detection; genetic mapping; animal feed; ds.
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71..492
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                                                                                                                                                                                                                                                                                                                                                                   Length 492;
                                                                                                                             alter the
                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                              Sequence 492 BP; 88 A; 169 C; 144 G; 88 T; 3 other;
                                                                                                                                                                                                                                                                                                                                                                  Score 489; DB 21;
Pred. No. 9.7e-91;
0; Mismatches 0;
                                                                                                                              used to
                                                                    Tingey
                                                                                                                                enzymes
                                             \Xi
                                                                     \mathfrak{C}_{3}
                                                                                                                                                                 60pp; English.
                                             ပ္ပ
                                                                                                                            Novel phytic acid biosynthetic enzyme in transgenic plants
                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                     99.4%;
                                                                     Thorpe
                                               4
                      98US-0082960
                                            (DUPO ) DU PONT DE NEMOURS
                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                    99.
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                                                                     Hitz WD,
                                                                                           2000-072181/06
                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
es 492; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGNGAAGAGA
                                                                                                       P-PSDB; AAY44230
                                                                                                                                                                  Page
                       24-APR-1998;
                                                                      Cahoon RE,
                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                Best Loc
Matches
                                                                                            WPI:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
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The present sequence is the cDNA insert in clone wlm0.pk0010.f6 encoding a portion of wheat extragenic suppressor protein. The cDNA clone was isolated from wheat seedlings. The level of expression of this phytic acid biosynthetic enzyme can be altered by transforming a host cell with the chimeric gene comprising this cDNA. This is done to increase levels of free phosphate and decrease phytic acid levels in developing seeds or in the construction of transgenic plants with altered levels of the enzyme. The phytic acid biosynthetic enzymes are used to raise antibodies, for enzyme detection in cells and cell extracts. The polynucleotides also serve as a source of probes and primers, for genetic mapping, as markers, and to isolate homologous sequences from other species. This is commercially used for animal feed.
                                                                                                                                                                    Clone wlm0.pk0010.f6; wheat extragenic suppressor protein; phytic acid biosynthetic enzyme; transformation; chimeric gene; antibody free phosphate; phytic acid level; transgenic plant; enzyme detection; genetic mapping; animal feed; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82 GGCCTGCGGGATAGCGGCCGTTGGATGGGCTCGGTTCGAGCCTCGCCTCTGAGGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTGAGCGCGAGTGGGCGCCAGCCGATGAGTACGGTTAGGGCCTCGTTCGCCGCTGGGGC
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                                                                                                                                     suppressor protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21; Length 1418;
                                                                                                                                                                                                                                                                                                                                                                                                                "Wheat extragenic suppressor protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   enzymes used to alter the level
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -25;
105;
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                                                                                                                                     encoding wheat extragenic
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                                                                                                                                                                                                                                                                                                                                                                                                                                          "Partial
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standard; DNA; 1418
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il Similarity 69.7%;
251; Conservative
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                                                                                            entry)
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/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-072181/06.
P-PSDB; AAY44233.
                                                                                         (first
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                                                                                                                                        CDNA
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                                                                                         21-FEB-2000
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                                                                                                                                                                                                                                                                                                       enzyme;
                                                                                                                                                                                                                                                                                                                               c mapping
     372
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                                                                                                                                                                                                                                                                                           .g19;
                                                                                                             CGAGATCATCGACAAAGAGGACCACAGTCCCGTCACGATCGCTGATAG-AGAAGCAGAAG
of
                                                 TGAGATCATCGACAAAGAGGACCACAGTCCTGTTACAATTGCAGATAGAAGAAGCAGAAG
                                                                                                  AAGCAATGGNGTCAGTTATACTGAAGAGCTTCCCTACTCAAUT 'AATTTTGGNGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                             suppressor protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Aytic acid biosynthetic enzymes used to alter the level in transgenic plants -
                                                                                                                                                                                                                                                                                     Clone s12.pk122.p24; clone src3c.pk013.g15; clone sflln.pk003 soybean extragenic suppressor protein; phytic acid biosynthet transformation; chimeric gene; antibody; free phosphate; phytic acid level; transgenic plant; enzyme detection; geneticanimal feed; ds.
                                                                                                                                                                                                                                                               Assembled cDNA contig encoding soybean extragenic suppressor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21;
3.4e-05;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1103 BP; 307 A; 238 C; 236 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H
                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                             "Soybean
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60pp; English.
                                                                                                                                                                                      AA229167 standard; DNA; 1103
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62.2%;
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                                                                                                                                                                                                                                       (first entry)
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/*tag= a
/product=
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phytic acid
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Similarity

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AGCGGCTGGTGGAGGTGGCGCAACGGGCGGCGGACGCTGCTGGGGAGGTGCTCANGAAGT 356
    Gaps
                                                          ATAGAAGAAGCAGAAGCAATGGNGTCAGTTATACTGAAGAGCTTCCCTACTCAAGCC
    1;
                                                                                                                                                                                                                                                                                                    therapy;
                                                                                                                                                                                                                                                                                                                                                                                 /product= "ORF#1 protein"
/note= "encoded protein shown in AAW72170"
1170..2174
                                                                                                                                                                                                                                                                                                                                                                                                                        /product= "ORF#2 protein"
/note= "encoded protein shown in AAW72171"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product- "ORF#4 protein"
/note= "encoded protein shown in AAW72173"
complement (3802..6447)
/*tag= e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product= "ORF#6d protein"
/note= "encoded protein shown in AAW72247"
6296..8482
/*tag= j
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW72172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product- "ORF#5 protein"
/note- "encoded protein shown in AAW72174
6017..8482
/*tag- f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in AAW72250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product= "ORF#6e protein"
/note= "encoded protein shown in AAW72248
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                                                                                                                                                                                                                                                                                                   response induction;
protein inhibitor; s
  73;
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/note= "encoded protein shown
6026..8482
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/note- "encoded protein shown
complement (4130..3735)
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/product= "ORF#6f protein"
/note= "encoded protein shown
  Mismatches
                                                                                                                                                                                                                                                                             HSV-2 strain SB5 Contig ID 15 DNA sequence
                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
755..1297
/*tag= a
                                                                                                                                                                                                                   standard; DNA; 117213 BP
                                                                                                                                                                                                                                                                                                HSV-2 strain SB5; immunological antiviral identification; viral
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2229..2930
/*tag= c
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6065..8482
/*tag= h
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6167..8482
                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                simplex virus type
                                                                                                                                            AATTTTGGNGAAGAGA 492
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  Conservative
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                                                                                                                                                                                                                                                         13-JAN-1999
122;
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<pre>complement (2763031784) /*tag= ab /product= "ORF#20a protein" /note= "encoded protein shown in AAW72224" complement (32067.32735)</pre>	complement (3206/32/35) /*tag= ac /product= "ORF#21 protein" /note= "encoded protein shown in AAW72187" 3314034984 /*tag= ad	/product= "ORF#22a protein" /note= "encoded protein shown in AAW72226" 3338634984 /*tag= ae	/product= "ORF#22b protein" /note= "encoded protein shown in AAW72227" complement (3520537721)	/reay= a1 /product= "ORF#23 protein" /note= "encoded protein shown in AAW72188" complement (3805839188) /*tag= ag		5 protein protein s	tein" in shown in AAW72191"	<pre>/trans1_except= (pos: 4406344064, aa: Lys) /product= "ORF#27 protein" /note= "encoded protein shown in AAW72192" complement (4485347297)</pre>	<pre>/*tag= ak /product= "ORF#28 protein" /note= "encoded protein shown in AAW72193" 4712247338</pre>	/*tag= al /product= "ORF#29 protein" /note= "encoded protein shown in AAW72194" complement (4730549662)	/*tag- am /product- "ORF#30 protein" /note- "encoded protein shown in AAW72195" complement (5003551666)	/"cay- an /product= "ORF#31 protein" /note= "encoded protein shown in AAW72196" complement (5170153575)	/"tag= ao /product- "ORF#32 protein" /note= "encoded protein shown in AAW72197" 5439358115		/*tdg= aq /product= "ORF#34 protein" /note= "encoded protein shown in AAW72199" complement (5897060760)	/*tag= ar /product= "ORF#35 protein" /note= "encoded protein shown in AAW72200" 6075961151	
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c protei protein b protei	te= "encoded protein shown in AAW7224568482 ag= 1 oduct= "ORF#6a protein" ansl_except= (pos: 74007402, aa: Ala	ansl_except= (pos: 74817486, te= "encoded protein shown in A 79347 ag= m	/product= "ORF#7 protein" /note= "encoded protein shown in AAW72175" complement (960411855) /*tag= n	/transl_except= (pos: 1163511636, aa: Ala) /product= "ORF#8 protein" /note= "encoded protein showr in AAW72176" complement (1190514508)	/product= "ORF#9b protein" /note= "encoded protein shown in AAW72222" complement (1190514520)	/ cay P /product= "ORF#9a protein" /note= "encoded protein shown in AAW72223" 1439915802	/product= "ORF#10 protein" /product= "ORF#10 protein" /note= "encoded protein shown in AAW72177" complement (1599616286)	/product= "ORF#11 protein" /note= "encoded protein shown in AAW72178" complement (1620218064)	/ cay= s /product= "ORF#12 protein" /note= "encoded protein shown in AAW72179" complement (1810519661)	/product= "ORF#13 protein" /product= "ORF#13 protein" /note= "encoded protein shown in AAW72180" complement (1941520074)	/product= "ORF#14 protein" /note= "encoded protein shown in AAW72181" 2015521453 /*tag= v	/product= "ORF#15 protein" /note= "encoded protein shown in AAW72182" complement (2132622291)	/product= "ORF#16 protein" /note= "encoded protein shown in AAW72183" complement (2254624654)	/product= "ORF#17 protein" /note= "encoded protein shown in AAW72184" 2468425955 /*tag= v	/product= "ORF#18 protein" /note= "encoded protein shown in AAW72185" complement (2629527251)	"ORF#19 protein encoded protein s nt (2763031754)	/product= "ORF#20b protein" /note= "encoded protein shown in AAW72225"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Determining the degree of cytosine methylation in genomic DNA, for diagnosis and prognosis, comprises selective hybridization amplicons from chemically treated DNA
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drug; side effect; cancer; central nervous system; cardiovas
gastrointestinal; respiratory system; single nucleotide poly
SNP; cell differentiation; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This invention describes a novel method for determining the methylation of a particular cytosine in a motif 5'-CpG-3', I genomic sample of DNA. The sample is treated chemically to cytosine (C) but not methylated C, to uracil, then part of the DNA that contains the target C is amplified to form a labele The amplicon is hybridised to two classes, each with at least member, of oligonucleotides and/or peptide-nucleic acid (PNA)
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                                   Length 117
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                                 Score 64.4; DB 19;
Pred. No. 0.00048;
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Mismatches
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1D ABQ52496 standard; DNA;
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05-SEP-2000;
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and the degree of hybridisation to both classes is determined from the label on the amplicon. From the ratio of labels hybridised to the two classes of oligomers, the degree of methylation is calculated. The method is used: (i) for diagnosis and/or prognosis of side effects of therapeutic drugs and of a wide range of diseases, e.g. cancer, disorders of the central nervous, cardiovascular, gastrointestinal and respiratory systems etc., particularly by detecting mutations or single nucleotide polymorphisms (SNP's); and (ii) for differentiation of cell or tissue types and for investigating cell differentiation. The method allows the methylation status of many C residues to be determined simultaneously. ABQ13410-ABQ54121 represent genomic DNA sequences used to illustrate the method for determining the degree of cytosine methylation described in the disclosure of the invention.
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Pred. No. 0.0035;
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genomic sample of DNA. The sample is treated chemically to convert cytosine (C) but not methylated C, to uracil, then part of the genomic DNA that contains the trarget C is amplified to form a labeled amplicon. The amplicon is hybridised to two classes, each with at least one member, of oligonucleotides and/or peptide-nucleic acid (PNA) oligomers and the degree of hybridisation to both classes is determined from the label on the amplicon. From the ratio of labels hybridised to the two classes of oligomers, the degree of methylation is calculated. The method is used: (i) for diagnosis and/or prognosis of side effects of the rappentic drugs and of a wide range of diseases, e.g. cancer, disorders of the central nervous, cardiovascular, gastrointestinal and respiratory systems etc., particularly by detecting mutations or single nucleotide polymorphisms (SNP's); and (ii) for differentiation of cell or tissue types and for investigating cell differentiation. The method allows the methylation status of many C residues to be determined simultaneously. ABQ13410-ABQ54121 represent genomic DNA sequences used to illustrate the method for determining the degree of cytosine methylation described in the invention.
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imaging; diagnostic; genetic c
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                                                                                                                                                                                                                                                                                                                       Sequence 600 BP; 44 A; 478 C; 51 G; 26 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encoding novel human diagnostic protein #3616
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Pred. No. 0.0035;
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58.1%;
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2000US-0649167
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food supplement; medical ir
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104; Conserv
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-PSDB; ABG03625.
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23-AUG-2000;
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polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The and gene mapping, and in recombinant production of (II). The polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving to restore normal activity of (II) or to treat disease states involving a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences of the invention.

Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO. The wipo.int/pub/published_pot_sequences.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Brn-3a; Bcl-2; neurons; neuronal cells; apoptosis; cell death; CNS; PNS; central nervous system; development; injury; neurotrophic factor; nerve growth factor; NGF; ciliary neurotrophic factor; CNTF; brain-derived neurotrophic factor; BNTF; neurotrophin; NT-3; NT-4; NT-5; neurodegenerative disease; familial dysautonomia; infantile muscular dystrophy; Parkinson's disease; Alzheimer's disease; ss.
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                                          isolated polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 58.6; DB 23;
Pred. No. 0.0042;
); Mismatches 109;
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  English
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/product= Brn_3a_polv
3616; 103pp;
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Best Local Similarity 53.2%;
Matches 124; Conservative
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                                          invention relates
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 Claim 1;
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                                                                                                                                                                                                                                                                                                                   Cells from apoptosis. Brn-3a also specifically activates expression of the BC1-2 gene in neuronal cells and this activates expression of the BC1-2 gene in neuronal cells and this activation is mediated via a Brn-3a response element in the 5' regulatory region of the C octivate expression of BC1-2 are mediated by the N-terminal comain of Brn-3a. Members of the BC1-2 family perform critical roles in the regulation of selective apoptosis during development of the nervous system. The stimulation of BC1-2 expression by Brn-3a in a neuron specific manner and consequent protection of neuronal cells from apoptosis suggests that Brn-3a may co-ordinate some aspects of neuronal reorganisation during development or following injury. The elevation of Brn-3a expression by either pharmacological means (compositions comprising one other therapeutic polypeptide e.g. neurotrophic factors, nerve growth factor (NGF), ciliary neurotrophic factors, nerve growth factor (NGF), ciliary neurotrophic factor (CNTF), brain-derived neurotrophic factor (BNTF), and neurodefone cell death and/or lack of nerve regeneration, especially neurodegenerative diseases such as familial dysautonomia and infantile muscular dystrophy, and Parkinson's and Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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reventing
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                                                                                                                                                                                                                         New polypeptide comprising transcription factor Brn-3a, or i derivative - useful for treating nervous system diseases, preellular apoptosis and increasing nerve regeneration followineuronal damage
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 58.2; DB 20; Length 120
Pred. No. 0.0055;
0; Mismatches 128; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1266 BP; 201 A; 455 C; 458 G; 152 T; 0 other;
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51.3%;
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                                                                                     97US-0988476
97GB-0015823
                                                           98WO-GB02228
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                                                                                                                                                           Smith MD;
                                                                                                                                                                                   WPI; 1999-142928/12
P-PSDB; AAW96263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                        10-DEC-1997;
25-JUL-1997;
                                                                                                                                                            Latchman DS,
       W09905272-A1
                                                                                                                                                                                                                                                                                                   Disclosure;
                                  04-FEB-1999
                                                            27-JUL-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  371
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                                                                                                                                                              cervical cancer; human papilloma virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     preventing and diagnosing cervical cancer
e sequence or molecule which binds to Brn-3a,
I lar levels or inhibits its activity
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                                                                                                                                                                                                                                                                                                           Brn-3a_transcription_factor
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Pred. No. 0.0055;
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/*tag= a
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51.3%;
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99US-0282210
                                                                                                                                                                               cytostatic;
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                                                                                                                                                                                                                                                                                                              /product-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n cleotide
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P-PSDB; AAY96405.
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                                                                                                                                                                  modulator;
                  standard;
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Best Local 9
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9007/c
AAA29007
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2000US-0231242.
2000US-0231243.
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2000US-0231244.
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2000US-0231413.
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2000US-0232399.
2000US-0234997.
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12-SEP-2000

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14-SEP-2000

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15-SEP-2000

17-SEP-2000

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19-SEP-2000

114-SEP-2000

114-SEP-2000

115-SEP-2000

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118-SEP-2000

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2000US-0189874.
2000US-0198123.
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24-FEB-2000;

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16-MAR-2000;

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17-MAR-2000;

17-MAR-2000;

19-MAY-2000;

107-JUN-2000;

11-JUL-2000;

11-JUL-2000;

14-AUG-2000;

15-AUG-2000;

16-AUG-2000;

17-AUG-2000;

18-AUG-2000;

18-AUG-2000;

18-AUG-2000;

18-AUG-2000;

18-AUG-2000;

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10-SEP-2000;

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11-SEP-2000;

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11-SEP-2000;
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Homo sapiens.
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17-MAR-2000;

17-MAR-2000;

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Note: The sequence data for this patent did not form part of the printer specification, but was obtained in electronic format directly from WIPO
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Pred. No. 0.01
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2000US-0249244.
2000US-0249245.
2000US-0249264.
2000US-0249297.
2000US-0249297.
2000US-0249299.
2000US-0250160.
2000US-02501988.
2000US-0251888.
2000US-0251868.
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larity 58.2%;
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Best Local Similarity
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17 - NOV - 2000;
01 - DEC - 2000;
01 - DEC - 2000;
05 - DEC - 2000;
05 - DEC - 2000;
05 - DEC - 2000;
06 - DEC - 2000;
08 - DEC - 2000;
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My Human; Connective tissue related disorder; cancer; gene therapy; My Coctatil; gene; ds. My Cocolissada. My Coco
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11-DEC-2000; 2000US-0254097 05-JAN-2001; 2001US-0259678

SCI INC (HUMA-) HUMAN GENOME

Ruben SM; Barash CA, Rosen

WPI; 2001-565190/63.

polypeptides, a disorder tissue associated gor ameliorating Nucleic acid encoding novel connective ti used in diagnosing, preventing, treating such as cancer or rheumatoid arthritis

English. 673pp; SEQ 1D No 1335; Disclosure;

The present invention relates to the isolation of novel human connective tissue related polypeptides (AAU86435-AAU86923) and the polynucleotide (CDNA and genomic) sequences encoding them. The sequences of the invention are useful in the diagnosis, treatment, prevention and/or prognosis of diseases associated with connective tissue(s), including cancer. The polynucleotide sequences of the invention are also useful in gene therapy. ABK42102-ABK43116 represent genomic sequences encoding the novel human connective tissue related polypeptides.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO specification, but was obtained in electronicat ftp.wipo.int/pub/published\_pct\_sequences.

Sequence 11189 BP; 2196 A; 3373 C; 3188 G; 2432 T; 0 other;

Length 11189; ö Indels DB 23; 71; 56.4; DB 2 No. 0.016; ed. No. 0.03 Mismatches 11.5%; Score 58.2%; Pred. ; Conservative Similarity 66 Query Match Local Matches

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GCCC JACATTTAAACCTTGCTCCCGACAACGCCCCCGACTCCTCCCCAATGCTCTCCT 80 21 5227 QQ

140 CTTCCTCCTCCACCCACTCGCCACCTCGCCCTTCCCCGGCCTCGCCTCCGCAAACCCTA 5287 81 ò d

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RESULT AAI8434

AAI84343 standard; cDNA; 434 BP

(first entry) 06-NOV-2001 AAI84343;

NO 4403 ID Human polynucleotide SEQ

Human; cytokine; cell proliferation; cell differentiation; gene therapy; vaccine; peptide therapy; stem cell growth factor; haematopoiesis; tissue growth factor; immunomodulatory; cancer; leukaemia; nervous system disorders; arthritis; inflammation; ss. 

Homo sapiens

WO200164835-A2

07-SEP-2001.

2001WO-US04927 26-FEB-2001; 28-FEB-2000; 2000US-0515126 18-MAY-2000; 2000US-0577409

(HYSE-) HYSEQ INC.

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2001WO-JP04192

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18-MAY-2001;
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                                                                                                             The invention relates to human polynucleotides (AAI79941-AAI93841) and the encoded proteins (AAO00010-AAO13910) that exhibit activity elating cytokine, cell proliferation or cell differentiation or which may induc production of other cytokines in other cell populations. The polynucleotides are useful in gene therapy, vaccines c peptide therapy. The polypeptides have various cytokine-like activities e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and
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une
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mouse; ischaemia; compressive ischaemia; occlusive ischaemia; vasospastic ischaemia; ischaemic condition; ischaemic disease;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            condition related cDNA sequence SEQ ID NO:686
                                                         useful for preventininflammation and immu
                                                                                                                                                                                                                     Note: The sequence data for this patent did not form part of specification, but was obtained in electronic format directl
                                                                                              SEQ ID NO 4403; 1399pp + Sequence Listing; English
                                                                                                                                                                                                                                                                            Length 434;
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                                                                                                                                                                                                                                                           Sequence 434 BP; 34 A; 32 C; 256 G; 47 T; 65 other;
                                                                                                                                                                                                                                                                                                149;
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Pred. No. 0.014;
                                                                                                                                                                                                                                        at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                 Mismatches
                                                    Isolated nucleic acids and polypeptides diagnosing and treating e.g. leukaemia, disorders -
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AB199656/c
ID AB199656 standard; cDNA; 1286 BP
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             Drmanac RT;
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ilarity 41.8%;
Conservative
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107; Conserva
                                2001-514838/56
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            Liu C,
                                         AAO04412
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Best Local
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                                         P-PSDB;
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The present invention describes a method for examining ischaemic conditions, comprising measuring the expression levels of particular genes (I) in a test sample or determining the expression profile of a gene group in the sample comprising genes selected from (I). The method is useful for examining the ischaemic condition (e.g. compressive
                                                                                                                                                                                   Examining the ischemic condition (e.g. occlusive ischemia) by measuring expression levels of particular genes defined in the specification or by determining the expression profile of a gene group comprising these
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                  is useful for examining the ischaemic condition (e.g. compressive ischaemia, occlusive ischaemia or vasospastic ischaemia) by measuring expression levels of particular genes (AB199202 to AB199912, encoding the protein sequences in ABB57020 to ABB57374) or by determining the expression profile of a gene group comprising these genes. The expression levels or expression profiles produced by these genes are used as an indicator when screening for ischaemic condition-improving drugs or therapeutics for ischaemic diseases. AB199913 and AB199914 represent PCR primers for a mouse ischaemic condition related sequence, which are used in the exemplification of the present invention.
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                                                                                         Ishii
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Pred. No. 0.016;
); Mismatches 229;
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                                                                                             Nagata
                                              PERSON
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                                                                                             Takahashi
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32.48;
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                                                                                               Ishikawa K,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, colymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The colynucleotides are also used in diagnostics as expressed sequence tags (for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
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   ic;
Human; chromosome mapping; gene mapping; gene therapy; forensic;
food supplement; medical imaging; diagnostic; genetic disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     853;
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larity 51.2%; Pred. No. 0.016;
Conservative 0; Mismatches 147;
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2000US-0649167
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B; ABG03626.
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155; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                  (HYSE-) HYSEQ INC.
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23-AUG-2000;
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The present invention describes a method for examining ischaemic conditions, comprising measuring the expression levels of particular genes (1) in a test sample or detail of a genes are group in the sample or detail genes selected from (1). The method is useful for examining the ischaemic condition (e.g. compressive ischaemia, occlusive ischaemia or vasospastic ischaemia) by measuring expression levels of particular genes (AB199202 to AB199912, encoding the protein sequences in ABB57020 to ABB99202 to AB199912, encoding the expression profile of a gene group comprising these genes. The expression levels or expression profiles produced by these genes are used as an indicator when screening for ischaemic condition-improving drugs or therapeutics for ischaemic diseases. AB199913 and AB199914 represent PCR primers for a mouse ischaemic condition related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Examining the ischemic andition (e.g. occlusivalschemia) by measuring expression levals of particular genes defined in the specification or by determining the expression profile of a gene group comprising these
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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Pred. No. 0.024;
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                                                                                                                                                                                                                                                                       standard; cDNA; 1045 BP
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Search completed: November 19, 2002, 00:26:51 Job time : 396 secs

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GenCore version 5.1.3
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- protein search, using sw model OM protein

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Scoring table:

112892 hits satisfying chosen parameters: 112892 seqs, 41476328 residues of Total number Searched:

seq length: 0 seq length: 2000000000 Minimum DB Maximum DB

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_40:\* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## STIMMARTES

SUMMARIES		Description	LVI P5616	EAE Q9hxi	SMU Q9cnv8 pasteurel	7791 aquifex a	N P44333 haemophil	CES P54928 lycopersi	LTY P58537 salmonell	OLI P22783 escheric	BCH Q9kty	P54926 1yco	CES P54927 1yc	O49071 me	Q9pam0 xylella	033832 the	Q98f59	Q45499 bac	9785	P74158	092m7	P20456	NLA P29219 xenopus l	P2225	055023 п	Q9jz07 neisser	0nj60	7573 met	4732 homo sapi	9218 homo sapi	T P97697 rattus no	071	P262	
SUMM			4	1 SUHB_PS	SUHB_P	SUHB	SUHB	MY03_	SA	SUHB_E	SUHB_V	MY01	MY02	MYOP	SUHB	SUHB	SUHB	SUHB	STRO	SUHB_	SUHB	MYOP	MYOP_X	CYSQ_EC	MYOP_	SUHB	SUHB	SUHB	MYO2_	MYOP_	1 MYOP_RA	CYSQ_A	YSO_S	
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10.5 10.4 10.1 9.9 9.9 9.2 9.2 9.1 8.8 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2	STANDAR  1. 35, 1. 35, 1. 35, 1. 37, 2 kDa ioforme obi; Ch  ioforme cobi; Ch  ioform	larity 33. Conservative AAGEVLRKYF-R
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                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN=ATCC 15692 / PAO1;
MEDLINE=20437337; PubMed=10984043;
Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P., Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M., Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y., Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M., Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen T., Smith K.A., Saier M.H., Hancock R.E.W., Lory S., Olson F.', "Complete genome sequence of Pseudomonas aeruginosa PACI, an opportunistic pathogen.";
Nature 406:959-964(2000).
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = myo-
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                                                                                                                                                                                                                                     Pseudomonas aeruginosa.
Bacteria; Proteobacteria; gamma subdivísion; Pseudomonadacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Magnesium (By similarity).
Y: BELONGS TO THE INOSITOL MONCHOSPHATASE FAMIL
                                                                                                                                  15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase) (Inositol-
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                   229
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180 VRGWGDCYGHMLVASGRAEVAVDKIMSPWDCAAVIPIVEEAGGCCFDYRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hydrolase; Magnesium; Complete proteome.
SEQUENCE 271 AA; 29521 MW; EE1D43CFFEB871EA
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Pred. No. 1.8e-15
54; Mismatches 10
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InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
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ilarity 29.7%;
Conservative 54
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HSSP; P29218; 11MF.
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COFACTOR: Magnesium .
SIMILARITY: BELONGS T
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                                                                                                                                                                                                    phosphatase)
SUHB OR PA381
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LVEVAQRAADAAGEVLRKYFRQR--VEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHA 135
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Proc. Natl. Acad. Sci. U.S.A. 98:3460-3465(2001).
-1- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = inositol + phosphate.
-1- COFACTOR: Magnesium (By similarity).
-1- SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28;
                                                                                                                                                                                  (Inositol-1
                                                                                                                                                                                                                       Pasteurella multocida.
Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae,
Pasteurella.
NCBI_TaxID=747;
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HSSP; P29218; 11MF.
InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete proteome.
SEQUENCE 267 AA; 29470 MW; E7070FAE3BAS89CA CRC64;
                                                                                                                                     15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
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ed. No. 4.2e-15;
Mismatches 111
-DKLHWPVTAESRPTSFNVVAAGDARVHKEALDALR
                              - IVAGNTKCFKALLTTIQ
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Pred.
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STRAIN=Pm70;
MEDLINE=21145866; Pubmed-11248100;
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83; Conser
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Huber R.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HAIFGEENGWRCAENS-ADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nature 392:353-358(1998).
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 inositol + phosphate.
-!- COFACTOR: Magnesium (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMB the European Bioinformatics Institute. There are no restriuse by non-profit institutions as long as its content imodified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-sior send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                               Deckert G., Warren P.V., Gaasterland T., Young W.G., Lenox A Graham D.E., Overbeek R., Snead M.A., Keller M., Aujay M., H Feldman R.A., Short J.M., Olson G.J., Swanson R.V.; "The complete genome of the hyperthermophilic bacterium Aqui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COFACTOR: Magnesium (By similarity).
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMI
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HEVVGEEMG---AEGSGSEYRWFIDPLDGTKNYINGFI:IFAVSVGLVKGEEPIVG
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                                                                            15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase) (Inositol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
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                                                                                                                                                               phosphatase) (1-1-Pase).
SUHB OR IMP2 OR AQ_1983.
Aquifex aeolicus.
Bacteria; Aquificae; Aquificae (class); Aquificales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTT. PHLFEADA-
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ed. No. 1.7e-14;
Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000760; Inositol_P.
Pfam; PF00459; Inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; FALSE_NEG.
Hydrolase; Magnesium; Complete proteome.
SEQUENCE 264 AA; 29336 MW; 10F32D1D3B81B76A
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Pred.
                                     PRT;
                                                                                                                                                                                                                                                                                                                                                        MEDLINE=98196666; PubMed=9537320;
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28.5%;
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                                       STANDARD;
                                                               67791;
5-JUN-2002 (Rel. 41, C
5-JUN-2002 (Rel. 41, I
5-JUN-2002 (Rel. 41, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HSSP; P29218; 11MF.
InterPro; IPR000760;
Pfam; PF00459; Inosit
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75; Conserv
                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. STRAIN*VF5;
                                                                                                                                                                                                                                                      Aquifex.
NCBI_TaxID=63363;
                                      SUHB_AQUAE
067791;
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Best Local S
Matches 75
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Whole-genome random sequencing and assembly of Haemophilus influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Myo
                                                                                                                                                                                                                                                                                                                                                                     STRAIN=Rd / KW20 / ATCC 51907;
MEDLINE=95350630; PubMed=7542800;
Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F. Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.P. McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D., Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C. Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78 LVEVAQRAADAAGEVLRKYFRQR--VEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            I FGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILR
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SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY
                                                                                                                                                                                                                                                            subdivision; Pasteurellacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 267
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Prosite; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete proteome.
SEQUENCE 267 AA; 29499 MW; DF974E0DABOCCEA6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rd.";
Science 269:496-512(1995).
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate
inositol + phosphate.
-!- COFACTOR: Magnesium (By similarity).
-!- COFACTOR: wellowed to the inositol monophosphata
                                              01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
phosphatase) (I-1-Pase).
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ed. No. 6e-14;
Mismatches 11
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267
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Pred.
                                                                                                                                                                                                                            Haemophilus influenzae.
Bacteria; Proteobacteria; gamma
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30.8%;
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HSSP; P29218; 11MF.
TIGR; HI0937; -.
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   STANDARD;
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                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                    Haemophilus
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RESULT 5 SUHB\_HAEIN

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Matches
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301
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                                                                                                                                                                                                                                                                                                                                    encoded
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                                                                                                                                                                                                                                                                                                                                              by a multigene family.";

Plant Cell 7:2175-2185(1995).

-!- FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INOSITOL REQUII

FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSITIDES

FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSITIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HAIFGEENGWRCA - - ENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -- LRMCGSCALNLCGVACGRLDLFYELEFGGPWDVAGGAVIVKEAGGFVFDPS
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                                                                                                                                                                                                                                                                                                                       Gruissem W.;
a lithium-sensitive enzyme
                                                                                                                                                                       Lycopersicon esculentum (Tomato).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheol
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMB1 the European Bioinformatics Institute. There are no restricuse by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-silor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RVRNKVKVPLYGCDCYAYAL - - LASGFVDIVVESGL - KPYDFLSLVPVIEGAGGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNALI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMI
                                                                                                                                              (IMPase
                                                                                                                                                                                                                                                                                                                                                                                                           H(2)0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CRC64;
                                                                                                                                             .25)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENZYME REGULATION: INHIBITED BY LI(+).
PATHWAY: KEY ENZYME OF THE PHOSPHATIDYL INOSITOL
                                                                                                                                                                                                                                                                                                                                                                                                           CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate
                                                                                                                 update)
on update)
e 3 (EC 3.1.3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 265.5; DB 1;
Pred. No. 1.9e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                         inositol + phosphate.
COFACTOR: REQUIRES MAGNESIUM (BY SIMILARITY)
ENZYME REGULATION: INHIBITED BY LI(+).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lithium; Multigene family 054 MW; BCB635A029804901
                                                                        AA
25
  -AGNSYLRSGNIIAA-PSRVIKEMLNKIR
                                                                                                                             annotation
                                                                                       01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence u
16-OCT-2001 (Rel. 40, Last annotation
Myo-inositol-1(or 4)-monophosphatase
3) (Inositol monophosphatase
                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN=cv. VFNT Cherry;
MEDLINE=96351935; PubMed=8718627;
Gillaspy G.E., Keddie J.S., Oda K.,
"Plant inositol monophosphatase is a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P29218; 11MF.
ro; IPR000760; Inositol_P.
PF00459; inositol_P; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Magnesium; Lithium 268 AA; 29054 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; U39059; AAB19031.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00629; IMP_1
PROSITE; PS00630; IMP_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
83; Conser
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KVRS---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PATHWAY
                                                                     MYO3_LYCES
P54928;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          192
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                                                                        MY03
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=LT2 / SGSC1412 / ATCC 700720;
STRAIN=LT2 / SGSC1412 / ATCC 700720;
MEDLINE=21534948; PubMed=11677609;
McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreille P., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D., Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney E., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
"Complete genome sequence of Salmonella enterica serovar Typhimurium LT2.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78 LVEVAQRAADAAGEVLRKYFR--QRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHA 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   myo-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ELFTATRGGGAQLNGYRLRGSTARDLDGTILATGFP - - FKAKQYATTYINIIGKLFTECA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --YGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTTSPHLFEA-DAEDAFIRVRNKVKVPL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ure 413:852-856(2001).

CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = inositol + phosphate.

COFACTOR: Magnesium (By similarity).

SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
                                                                                                                                                                                                                                                                                                                                                  (Inositol-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                267;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium: Complete proteome.
SEQUENCE 267 AA; 29158 MW; FC46D8A8298BB334 CRC64;
                                                                                                                                                                                                                                                       15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15.1%; Score 262; DB 1; I ilarity 30.0%; Pred. No. 3.5e-13; Conservative 44; Mismatches 123;
                                                                                                                                                                                                        AA
                                                                                                                                                                                                   267
GDKLHWPVTAESRPTSFNVVAAGDARVHKEALDAL
                                                 -VAATNAHLKDAFIKAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Inositol_P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AE008815; AAL21440.1;
                                                                                                                                                                                                                                                                                                                                                                             phosphatase) (I-1-Pase).
SUHB OR STM2546,
Salmonella typhimurium.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nature 413:852-856(2001)
                                                                                                                                                                                                       STANDARD;
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InterPro; IPR000760;
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                                                     GSE--FDLTARR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=602;
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                                                                                                                                                                                                   SUHB_SALTY
P58537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Salmonella
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Yasunaga T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   s.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=97349980; PubMed=9205837;
Yamamoto Y., Aiba H., Baba T., Hayashi K., Inada T., Isono K., Itoh T., Kimura S., Kitagawa M., Makino K., Miki T., Mitsuhashi N., Mizobuchi K., Mori H., Nakade S., Nakamura Y., Nashimoto H., Oshima T., Oyama S., Saito N., Sampei G., Satoh Y., Sivasundaram S. Tagami H., Takahashi H., Takeda J., Takemoto K., Uehara K., Wada C. Yamagata S., Horiuchi T.;
"Construction of a contiguous 874-kb sequence of the Escherichia co-rostoretion of a contiguous 874-kb sequence of the linkage map and analysis of its sequence features.";
DNA Res. 4:91-113(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=K12 / MG1655;

MEDLINE=97426617; PubMed=9278503;

Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.

Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,

Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
NEDLINE=21074935; PubMed=11206551;
MEDLINE=21074935; PubMed=11206551;
MEDLINE=21074935; PubMed=11206551;
A Porna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D.,
A Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A.,
A Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller I.,
Grotbeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K.,
A Grotbeck E.J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C.,
A Melch R.A., Blattner F.R.;
"Canome sequence of enterohaemorrhagic Escherichia coli 0157:H7."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , A
                                                                                                                                                                                        phosphatase) (I-1-Pase).
SUHB OR SSYA OR B2533 OR Z3800 OR ECS3399.
Escherichia coli, and
Escherichia coli O157:H7.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
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STRAIN=0157:H7 / RIMD 0509952;
MEDLINE=21156231; PubMed=11258796;
Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoya Hayashi T., Tanaka M., Tobe Tida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunag Iida T., Takami H., Honda T., Shinagawa H.;
Kuhara S., Shiba T., Hattori M., Shinagawa H.;
                                                                                          SUHB_ECOLI STANDARD; PRT; 26/ AA. P22783; P77511; Q8X2E6; 01-AUG-1991 (Rel. 19, Created) 01-AUG-1997 (Rel. 35, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
                                                                                                                                                                                                                                                                                                                                                MEDLINE=90202735; PubMed=2138605;
Yano R., Nagai H., Shiba K., Yura T.;
"A mutation that enhances synthesis of sigma 32 and suppresse
temperature-sensitive growth of the rpoH15 mutant of Escheric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
            -IVAGNPRVVKAMLANMR 258
                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteriol. 172:2124-2130(1990).
                                                                                                                                                                                                                                                                                    NCBI_TaxID=562, 83334;
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Mau B., Shao Y.;
                                                                                                                                                                                                                                                                     Escherichia
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136 IFGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILR
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                                                                                                                                                                                                                                                                                                  Chen L., Roberts M.F.;
"Overexpression, purification, and analysis of complementation behavior of E. coli SuhB protein: comparison with bacterial and archaeal inositol monophosphatases.";
Biochemistry 39:4145-4153(2000).
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = inositol + phosphate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBUNIT: Monomer.
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY
strain K-12.
                                                                                                                                                      coli
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                                                                                                                           K.;
the Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete proteome.
CONFLICT 141 141 R -> L (IN REF. 1).
SEQUENCE 267 AA; 29172 MW; 8FEC3508BD111301 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        124;
 a laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      h 14.9%; Score 258; DB 1; Similarity 29.6%; Pred. No. 7.2e-13; 79; Conservative 44; Mismatches 124,
                                                                                                                                                      from
                                                                                                                              Shiba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M34828; AAA67506.1; -.
EMBL; AE000339; AAC75586.1; -.
EMBL; D90883; BAA16427.1; -.
EMBL; D90884; BAA16435.1; -.
EMBL; AE005483; -; NOT_ANNOTATED_CDS.
EMBL; AP002562; BAB36822.1; -.
PIR; A35158; A35158.
HSSP; P29218; 11MF.
SWISS-2DPAGE; P22783; COLI.
comparison with
                                                                                    MEDLINE=95095968; PubMed=8002619; Matsuhisa A., Suzuki N., Noda T., S "Inositol monophosphatase activity product.";
                                                                                                                                                                                                                                                                                 PubMed-10747806
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InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
                                                                                                                                                                                                       Bacteriol. 177:200-205(1995)
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  nd genomic co
8:11-22(2001)
                                                                                                                                                                                                                                                                              MEDLINE-20213266;
                                                                                                                                                                                                                                                       CHARACTERIZATION.
and
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CONFLICT
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Best Local
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                                                                                                                                                                                                         STRAIN=El Tor N16961 / Serotype Ol;
MEDLINE=20406833; PubMed=10952301;
Heidelberg J.F., Eisen J.A., Nelson W.C., Clayton R.A., Gwinn M.I Dodson R.J., Haft D.H., Hickey E.K., Petersol J.D., Umayam L.A., Gill S.R., Nelson K.E., Read T.D., Tettelin H., Richardson D., Ermolaeva M.D., Vamathevan J., Bass S., Qin H., Dragoi I., Seller McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., White Salzberg S.L., Smith H.O., Colwell R.R., Mekalanos J.J., Venter J.
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                                                                                                                                                                                                                                                                                                                                                                                                               inositol + phosphate.
COFACTOR: Magnesium (By similarity).
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a coptween the Swiss Institute of Bioinformatiss and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                Vil
                                                                                                                                                                                                                                                                                                                                                sequence of both chromosomes of the cholera pathogen Vib
                                                                   15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase) (Inositol-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            32
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                                                                                                                                             Vibrio cholerae.
Bacteria; Proteobacteria; gamma subdivision; Vibrionaceae;
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88AD8CDF78A7AD87 CRC64;
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Pred. No. 4.2e-12
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Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000760; Inositol_P. Pfam; PF00459; inositol_P; 1. PROSITE; PS00629; IMP_1; 1. PROSITE; PS00630; IMP_2; 1. Hydrolase; Magnesium; Complete p SEQUENCE 267 AA; 29088 MW; 8
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29088 MW;
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28.9%;
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                                                                                                                   phosphatase) (I-1-Pase).
                             STANDARD;
                                                         (Rel. 41,
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                                                                                                                                                                                                        FROM N.A
                                                                                                                                                                             NCBI_TaxID=666;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VC0745;
                                                       15-JUN-2002
15-JUN-2002
15-JUN-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
STRAIN=cv. VFNT Cherry;
MEDLINE=96351935; PubMed=8718627;
Gillaspy G.E., Keddie J.S., Oda K., Gruissem W.;
Gillaspy G.E., Keddie J.S., Oda K., Gruissem W.;
Thant inositol monophosphatase is a lithlum-sensitive enzyme encode by a multigene family.";
Plant Cell 7:2175-2185(1995).
-! FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INOSITOL REQUIFFOR SYNTHESIS OF PHOSPHATIDXLINOSITOL AND POLYPHOSPHOINOSITIDES.
-! CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)O = myo-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -- VWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVI
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                                                                                                                                                   Lycopersicon esculentum (Tomato).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
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SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
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                                                                                                         (IMPase
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92D1D532E359E0FD CRC64;
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                                                                         update)
on update)
e 1 (EC 3.3
                            273
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                                                         01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation
Myo-inositol-1(or 4)-monophosphatase
                                                                                                                                                                                                                                                                                                                                                                                                  inositol + phosphate. COFACTOR: REQUIRES MAGNESIUM (BY ENZYME REGULATION: INHIBITED BY I
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IPRO00760; Inositol_P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         n; Lithium;
29558 MW;
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                                                                                                                      (Inositol monophosphatase
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28.98;
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PROSITE; PS00629; IMP_1; 1
PROSITE; PS00630; IMP_2; 1
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HSSP; P29218; 1IMF.
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                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Magnesium;
273 AA; 2
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                                                                                                                                                                                                             NCBI_TaxID=4081;
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01-OCT-1996
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                           MYO1_LYCES
P54926;
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InterPro;
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179
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                             (IMP
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                                                                                                                                                                                                                                                                                                                                                                                                                                  SECOLARIA FINEST CHERRY;
STRAIN=CV. VFNT Cherry;
MEDLINE=96351935; PubMed=8718627;
Gillaspy G.E., Keddie J.S., Oda K., Gruissem W.;
Rlant inositol monophosphatase is a lithium-sensitive enzyme encode by a multigene family. ";
Plant Cell 7:2175-2185(1995).
-!- FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INUSITOL REQUIF FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSITIDES.
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)O = myo-
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VVGVV
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                                                                                                                                                                                                                                                                                        Lycopersicon esculentum (Tomato).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheol
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; etasterids I; Solanales; Solantceae; Solanum.
NCBI_TaxID=4081;
                                                                                                                                                                                                                                           (IMPase
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EMBL; U39443; AAB19029.1; -.

HSSP; P29218; 11MF.

InterPro; IPR000760; Inositol_P.

Pfam; PF00459; inositol_P; 1.

PROSITE; PS00629; IMP_1; 1.

PROSITE; PS00630; IMP_2; 1.

PROSITE; PS00630; IMP_2; 1.

PROSITE; PS00630; IMP_2; 1.

PROSITE; PS00630; IMP_2; 1.
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SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inositol + phosphate.

COFACTOR: REQUIRES MAGNESIUM (BY SIMILARITY).

ENZYME REGULATION: INHIBITED BY LI(+).

PATHWAY: KEY ENZYME OF THE PHOSPHATIDYL NOSITOL
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2.5e-11;
ches 117;
                                                                                                                                                                            01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Myo-inositol-1(or 4)-monophosphatase 2 (EC 3.1.3
2) (Inositol monophosphatase 2).
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300 RGDKLHWPVTAESRPTSFNVVAAGDARVHKEALDALR
                    --VAATNPHLKEAFVEALQ
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Mismatches
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30.8%;
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                                                                                                                                      MYO2_LYCES
P54927;
01-OCT-1996
01-OCT-1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
Nelson D.E., Bohner, d.J.;
Submitted (DEC-1997) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: IT IS RESPONSIBLE FOR THE PROVISION OF INOSITOL REQUIRED FOR SYNTHESIS OF PHOSPHATIDYLINOSITOL AND POLYPHOSPHOINOSITIDES.
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 - myo-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136
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IFKVRSLRMSGSCALNLCGVACGRLDLFYEIEFG-GPWDVAAGALIVIEAGGLVLDPSGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mesembryanthemum crystallinum (Common ice plant).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Caryophyllidae; Caryophyllales; Aizoaceae; Mesembryanthemum.
NCBI_TaxID=3544;
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COFACTOR: REQUIRES MAGNESIUM (BY SIMILARITY).

ENZYME REGULATION: INHIBITED BY LI(+) (BY SIMILARITY).

PATHWAY: KEY ENZYME OF THE PHOSPHATIDYL INOSITOL SIGNALING PATHWAY.
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115;
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Pred. No. 4.3e-11
5; Mismatches 119
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                                                           KLHWPVTAESRPTSFNVVAAGDARVHKEALDAL
                                                                                               -VAATNAHLKDAFINAL
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15-DEC-1998 (Rel. 37, Last sequence up
15-JUN-2002 (Rel. 41, Last annotation
Myo-inositol-1(or 4)-monophosphatase (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AF037220; AAB92418.1; -. HSSP; P29218; 11MF. InterPro; IPR000760; Inositol_P.
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PROSITE; PS00629; IMP_1; 1.
Hydrolase; Magnesium; Lithium.
SEQUENCE 270 AA; 29161 MW;
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ilarity 29.0%;
Conservative 3
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Best Loc
Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            commercial
                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=ZU305/17; Fubmed=LU310340;

A NEDLINE=ZU305/17; Fubmed=LU310340;

A Naraenga R., Alves L.M.C., Arruda P., Baia G.S., Baptista C.S.,

A Navarenga R., Alves L.M.C., Arrya J.E., Baia G.S., Baptista C.S.,

Barros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S.,

Bueno M.R.P., Camargo A.A., Camargo L.E.A., Carraro D.M., Carrer H.,

Colauto N.B., Colombo C., Costa F.F., Costa M.C.R., Costa-Neto C.M.,

Colauto N.B., Colombo C., Costa F.F., Costa M.C.R., Costa-Neto C.M.,

Racincani A.P., Ferreira A.J.S., Ferreira V.C.A., Ferro J.A.,

Racincani A.P., Franca S.C., Franco M.C., Frohme M., Furlan L.R.,

Garnier M., Goldman G.H., Goldman M.H.S., Gomes S.L., Gruber A.,

Ho P.L., Hoheisel J.D., Junqueira M.L., Remper E.L., Kitajima J.P.,

Krieger J.E., Kuramae E.E., Laigret F., Lambais M.R., Leite L.C.C.,

Krieger J.E., Kuramae E.E., Laigret F., Lambais M.R., Leite L.C.C.,

A Lemos E.G.M., Lemos M.V.F., Lopes S.A., Lopes C.R., Machado J.A.,

Marchado M.A., Madeira A.M.B.N., Martins E.M.F., Matsukuma A.Y.,

Marchado M.A., Nagai M.A., Nascimento A.L.T.O., Netto L.E.S.,

A Moon D.H., Nagai M.A., Nascimento A.L.T.O., Netto L.E.S.,

A Duaggio R.B., Roberto P.G., Rodrigues V., de Rosa A.J.M.,

A de Rosa V.E. J.T., de Sa R.C., Santelli R.V., Sawasaki H.E.,

A de Silveira J.F., Silvestri M.L.Z., Siqueira W.J., de Souza A.A.,

A de Sulveira J.F., Truffi D., Tsai S.M., Tsuhako M.H.,

Vallada H., Van Sluys M.A., Verjovski-Almeida S., Vettore A.L.,

Vallada H., Van Sluys M.A., Verjovski-Almeida S., Vettore A.L.,

Vallada H., Van Sluys W.A., Verjovski-Almeida S., Vettore A.L.,
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to C.M.,
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na J.P.,
L.C.C.,
J.A.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lanis J., Setubal J.C.;
the plant pathogen Xylella fastidiosa.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COFACTOR: Magnesium (By similarity).
SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY.
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                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; gamma subdivision; Xanthomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                    15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase)
phosphatase) (I-1-Pase).
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MEDLINE-20365717; PubMed-10910347;
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PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
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                                                                                                          STANDARD;
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275 AA; 30
                                                                                                                                                                                                                phosphatase) (I-1-
SUHB OR XF2476.
Xylella fastidiosa
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1 | 1 | 249 TRIAASNP
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SUHB_XYLFA
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Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,
Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,
Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,
McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,
Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.
Heidelberg J., Sutton G.G., Fleischmann R.D., Eisen J.A., White O.,
Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;
"Evidence for lateral gene transfer between Archaea and Bacteria fi
genome sequence of Thermotoga maritima.";
Nature 399:323-329(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             inulinase)
                                                  VEVAQRAADAAGEVLRKYFR - - QRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHAI
                                                                                                                                       VPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVTA
                                                                      FGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILRE
                                                                                                                                                                                                                                                                            --RSGSAALDLAYVACGRADAYFEAGIKVWDVAAGMLLVREAGGYVCDFKGADA--PRMD
                                                                                                                                                                                         -- DAFIRVRNKVK
                                                                                                                                                                                                                         LFTASRGAGAILNERKIRVANRKDLNGTMLNTGFSPRERSRAHAQLKCVDALLMQAEDIR
               16;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-JUN-2002 (Rel. 37, Last sequence update)
Inositol-1-monophosphatase (EC 3.1.3.25) (IMPase) (Inositol-1
SUHB OR TM1415.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chen L., Roberts M.F.;
"Characterization of a tetrameric inositol monophosphatase fr
"Characterization of a tetrameric inositol monophosphatase fr
hyperthermophilic bacterium Thermotoga maritima.";
Appl. Environ. Microbiol. 65:4559-4567(1999).
-!- FUNCTION: Displays a 20-fold higher rate of hydrolysis of
isoform of inositol 1-phosphate than of the L isoform.
-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Thermotogae (class); Thermotogales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=98386670; PubMed=9720201;
Liebl W., Brem D., Gotschlich A.;
"Analysis of the gene for beta-fructosidase (invertase, i
the hyperthermophilic bacterium Thermotoga maritima, and
characterisation of the enzyme expressed in Escherichia c
Appl. Microbiol. Biotechnol. 50:55-64(1998).
                Indels
                                                                                                                                                                                         RWIGVDGKQTTLNGQE: SVRSCNI.I.AQAYLYT-TSP-HLFEADAE--
Pred. No. 5.2e-11; ; Mismatches 117
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               51;
28.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Thermotogae; Thermotogae; Thermotogaceae; ThermotogaeNCBI_TaxID=2336;
                                                                                                                                                                                                                                                                                                                             327
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SUBUNIT: Homotetramer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               + phosphate.
Similarity 28.473; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
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DSM 3109;
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                                                                                                                                                                                                                                                                                                                               ESRPTSFNVVAAGDARV
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DKGPESCQLV-AGNIKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUHB OR TM1415.
Thermotoga maritima
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CHARACTERIZATION
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COFACTOR:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                SUHB_THEMA
033832;
15-DEC-1998
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SEQUENCE
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131
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                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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STRAIN=MAFF303099;

MEDLINE=21082930; PubMed=11214968;

Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sasamoto S., Kaneko T., Nakama K., Ishikawa A., Kawashima K., Kimura T., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M., Takeuchi C., Yamada M., Tabata S.;

"Complete genome structure of the nitrogen-fixing symbiotic bact Mesorhizobium loti.";

DNA Res. 7:331-338(2000).

-!- CATALYTIC ACTIVITY: Myo-inositol 1-monophosphate + H(2)0 = minositol + phosphate.

-!- COFACTOR: Magnesium (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
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SIMILARITY: BELONGS TO THE INOSITOL MONOPHOSPHATASE FAMILY CAUTION: REF.2 SEQUENCE DIFFERS FROM THAT SHOWN DUE TO A FRAMESHIFT IN POSITION 22.
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998F59;
15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
15-JUN-2002 (Rel. 41, Last annotation update)
16-JUN-2002 (Rel. 41, Last annotation update)
16-JUN-2002 (Rel. 41, Last sequence update)
16-JUN-2002 (Rel. 41, Last sequence update)
17-JUN-2002 (Rel. 41, Last sequence update)
18-JUN-2002 (Rel. 41, Last sequ
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Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete proteome.
SEQUENCE 256 AA; 28647 MW; 550C15FEEA50BBDC CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 229.5; DB 1;
Pred. No. 1.1e-10;
44; Mismatches 104;
                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AJ001073; CAA04517.1; -.
EMBL; AE001794; AAD36486.1; ALT_FRAME.
HSSP; P29218; 11MF.
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nilarity 28.7%;
Conservative 44
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les 68; Conserv
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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 TO THE INOSITOL MONOPHOSPHATASE FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 266;
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InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Hydrolase; Magnesium; Complete proteome.
SEQUENCE 266 AA; 28655 MW; 843436E21ED326CF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 228; DB 1; Pred. No. 1.5e-10; 7; Mismatches 128;
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28.3%;
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SIMILARITY: BELONGS
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Best Local S
Matches 77
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larity 39.6%;
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Best Local
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  Y.; Woo,
M.; McClel
                                                                                                 Gordon-Kamm
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Species: Agrobacterium tumefaciens
Species: Agrobacterium tumefaciens
Species: Agrobacterium tumefaciens
Species: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 15-Feb-2002
State: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 15-Feb-2002
State: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 15-Feb-2002
Science 294, 2323-2328, 2001
State: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobact
A; Reference number: A97359; PMID:11743194
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    Chen,
    Li, N

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R;Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, Karp, P.; Romero, P.; Zhang, S. Science 294, 2317-2323, 2001
A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry
                                                                                                                                           The Genome of the Natural Genetic Engineer Agrobacterium Ice number: AB2577; PMID:11743193
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                                                                                                                                                                                                                                                                                             PIDN: AAL44693.1; PID:917742322;
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Pred. No. 7.3e-34;
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ilarity 42.7%; Pred. No. 8.fe-34;
Conservative 51; Mismatches 73;
                                                                                                                                                                                       A; Accession: AG3034
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-262 < KUR>
A; Experimental source: strain C58 (Dupont)
C; Genetics:
A; Gene: Atu3885
A; Map position: linear chromosome
C; Superfamily: suppressor protein suhB
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Conservative 51;
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A;Map position: linear chromosome
C;Superfamily: suppressor protein
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A; Status: preliminary
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                                                                                                                     ster, E.W.
A;Title: The Genome
A;Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: I
A: Residues: 1-297
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Best Local 3
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C.; Lelat, K.; Yeh,

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103;

38;

ore 483; DB 2; ed. No. 1.8e-30; Mismatches 103

Score 483; Pred. No. 1

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, F.; Barloy-H

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F.; Yeh,

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                                                     RAAAVGELATERLVEVA - - - QRAADAAGEVLRKYFRQRVEIIDKED - - HSPVTIADREAE
                                                                                    QPILRERWIGVUCKQTTLNG----QEISVRSCNLLAQAYLYTTSPHLFEADA-EDAFIRV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KLHWPVTAESRPTSFNVVAAGDARVHKEALDALR 336
    Mismatches
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  47;
  Conservative
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116;
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                                                                                                                                                                                                          J.; Heidelberg, J.; Haft, D.H.; Kolor
J.C.; Fraser, C.M.
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C; Species: Brucella melitensis
C; Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 15-Feb-2002
C; Accession: AF3515
R; DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, 'R; DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, 'R; DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, 'R; DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Fatra, Hagius, S.; O'Callaghan Proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A; Title: The genome sequence of the facultative intracellular pathogen Bruch A; Reference number: AD3252; PMID:11756688
                                                                                            inositol monophosphatase family protein [imported] - Caulobacter crescentus C; Species: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001 C; Accession: C87528
R; Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; H. B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A; Title: Complete Genome Sequence of Caulobacter crescentus.
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A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-278 <STO>
Y; Cross-references: GB: AE005673; NID: 913423761; PIDN: AAK24223.1; Genetics:
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No. 5.3e-29;
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A; Title: The genome sequence of the A; Reference number: AD3252; PMID:117
A; Accession: AF3515
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-272 < KUR>
A; Experimental source: strain 16M
C; Genetics:
A; Gene: BMEII0048
A; Map position: II
C; Superfamily: suppressor protein su
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                                                                                                                                                                                             RNKVKVP1,YGCDCYAYA1,1,ASGFVD1VVFSGL,KPYDFLSLVPV1FGAGGSITDWRG----
                                                                                                                                                                                                                                                                                                                                                                        monophophatase [imported] - Mycobacterium leprae
C; Species: Mycobacterium leprae
C; Date: 31-Jan-2000 #sequence_revision 31-Jan-2000 #te:
C; Accession: T45317
R; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
submitted to the EMBL Data Library, August 1997
A; Reference number: Z22864
A; Accession: T45317
A; Accession: T45317
A; Molecule type: DNA
A; Residues: 1-255 <PAR>
A; Residues: 1-255 <PAR>
A; Cross-references: EMBL: Z98271; PIDN: CAB11010.1
A; Experimental source: cosmid H1779
C; Genetics:
A; Note: MLCB1779.29
C; Superfamily: suppressor : otein suhB
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Superfamily: suppressor; otein subB
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A.; Larbig

    Yersinia

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                                                                                                                                                                                                                                                SPDB:GN0017
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probable inositol monophosphatase family protein YPO2899 [imported] - Yersing pestis C; Species: Yersing pestis C; Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Nov-2001 C; Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Nov-2001 C; Accession: AC0353 R; Pw.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; F deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; il, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, Nature 413, 523-527, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248
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                                                                                                                                         f plague
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         - LLAQAYLYTTSPHLFEADAEDAFIRVRNK
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extragenic suppressor protein SuhB PA3818 [imported] - Pseudomonas
Species: Pseudomonas aeruginosa
Species: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-271 <STO>
A; Cross-references: GB: AE004799; GB: AE004091; NID: 99949981; PIDN: A
                                                                                                                                                                                                                                                                                                                                                                                   32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K.R.; Kas
                                                                                                                                                                                                                                                                                                                                                                                                                    78 LVEVAQRAADAAGEVLRKYFR--QRVEIIDKEDHSPVTIADREAEEAMVSVILKSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             V----KVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDW
                                                                                                                                 A;Title: Genome sequence of Yersinia pestis, the causative agent
A;Reference number: AB0001; MUID:21470413; PMID:11586360
A;Accession: AC0353
                                                                                                                                                                                                                                             GB:AL590842; PIDN:CAC92150.1; PID:915980865;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   enome sequence of Pseudomonas aeruginosa 1 .01
A82950; MUID:20437337
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                                                                                                                                                                                                                                                                                                                                                                                  111;
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                                                                                                                                                                                                                                                                                                                                                Score 293; DB 2;
Pred. No. 1.3e-15;
3; Mismatches 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304 LHWPVTAESRPTSFNVVAAGDARVHKEALDAL 335
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                                                                                                                                                                                                                                                                                                 protein suhB
                                                                                                                                                                                                                                                                                                                                                                                   43;
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                                                                                                                                                                                                                                                                                                                                               16.9%;
illarity 31.6%;
Conservative 43
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                                                                                                                                                                                                                                                                                                    suppressor
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Best Local Similarity
Matches 86; Conserv
                                                                                                                                                                                                                               <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R; Stover, C.K.; Pham, adman, S.; Yuan, Y.; F.; Lory, S.; Olson, M. Nature 406, 959-964, 2
                                                                                                                                                                                         A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-267 <KUI
                                                                                                                                                                                                                            A; Residues: 1-267 <KU
A; Cross-references: G
C; Genetics:
A; Gene: YPO2899
C; Superfamily: suppre
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Length 255;

#text\_change 18-Feb-2000

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6
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C;Species: Aquifex aeolicus
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 21-Jul-2000
C;Accession: C70470
R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Gral
                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                242
                                                                                                                                                   198
                                                 81 VAQRAADAAGEVLRKYE-RORVELIDKEDHSPVFTADREAEEAMVSVILKSFPTHAIFGE
                                                                      STALTLADRADALISAREGALALREVI STOTT PVTDADRAVEADVRAVLGRERPKDGILGE
                                                                                                                                              --IGVDG------KOTTINGQE1SVRSCNLLAQAYLYTTSPHLFEADAEDAF
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 Indels
                                                                                                                                                                                                                                                                                 : | | : | | : | | | AARGQGAE'VAVDGVPRRI,AVSEVADI,NSASI,SFSSI,SGWAQRGL---
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78 IVEVAQRAADAAGEVLRKYFR--QRVETI---DKEDHSPVTIADREAHEAMVSV11

Thu

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Superessor protein subb - Haemophilus influenzae (strain Rd KW20)
C; Species: Haemophilus influenzae
C; Species: Haemophilus influenzae
C; Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 28-Jul-2000
C; Accession: F64103
R; Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavag
S; Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidma
, D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Glodek, A.; Kelley, J.M.; Weidma
, D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Fuhrmann, J.L.; Geoghagen, N.S.M
Science 269, 496-512, 1995
A; Authors: Gnehm, C.L.; McDoLald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Vent
A; Reference number: A64000; MUID:95350630
A; Reference number: A64103
A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: DNA
A; Status: 1-267 <TIGR>
A; Cross-references: GB:U32775; GB:L42023; NID:g1573951; PIDN:AAC22595.1; PIDS:g157395
C; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
A; George and B
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N;Alternate names: myo-inositol-1-phosphatase
C;Species: Lycopersicon esculentum (tomato)
C;Date: 14-May-1999 #sequence_revision 14-May-1999 #text_change 08-Oct-1999
C;Accession: T07795
R;Gillaspy, G.E.; Keddie, J.S.; Oda, K.; Gruissem, W.
Plant Cell 7, 2175-2185, 1995
A;Title: Plant inositol monophosphatase is a lithium-sensitive enzyme encoded by
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     122
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      --GSTTFTGR(WIVDPIDGTKNFVRGVPVWASLIALLEDGVPSVGVVSAPALQR
                                               --PHLFEADAEDAFIRV
                                                                                     --RERFIGL
                                                                                                                               RNKV-KVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKL
                                                                                                                                                                    TDTVWRVRAYG-DFLSYCLVAEGAVDIAAEPQVSVWDLAALDIVVREAGGRLTSLDG--
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                                                                         -14;
113;
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5.9e-14;
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                                              RWIGVDGKQ--TTLNG---QEISVRSCNLLAQAYLYTTS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 272; DB Pred. No. 5.9e-4; Mismatches
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                                                                                                                                                                                                              HWPVTAESRPTSFNVVAAGDARVHKEALDAL 335
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                                                                                                                                                                                                                                          --VAGPHGGSAVAT-NGLLHDEVLTRL
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Superfamily: suppressor protein
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ilarity 30.8%;
Conservative 44
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84; Conser
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Best Local S
Matches 84
          EFG.
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      68
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gc; Connor, R.; Bavies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holr ature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987
                            aeolicus
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                                                                                                                                                                                                                                                                                                                                                                             76 ERLVEVAQRAADAAGEVLRKYFR--QRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPT 133
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                    A; Title: The complete genome of the hyperthermophilic bacterium Aquifex A; Reference number: A70300; MUID: 98196666
                                                                                        not
                                                                                                                                                                                                                                                                                                                                                                                                   RNKVKVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                              134 HAIFGEENGWRCAENS-ADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (strain H37RV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary; nucleic acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ٠.
                                                              Accession: C70470
Status: preliminary; nucleic acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                    28;
                                                                                                        A;Molecule type: DNA
A;Residues: 1-264 <AQF>
A;Cross-references: GB:AE000766; GB:AE000657; NID:g2984216; PIDN:AA
A;Experimental source: strain VF5
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     probable monophosphatase - Mycobacterium tuberculosis (strain H37R) C;Species: Mycobacterium tuberculosis C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues: 1-260 <COL>
A; Cross-references: GB: Z83867; GB: AL123456; NID: g3261695; PIDN: CAB: C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 260;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              193 ILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTTSPHLFEADA--
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                                                                                                                                                                                                                                                                                                                                    106;
                                                                                                                                                                                                                                                                                            Score 279; DB 1;
Pred. No. 1.6e-14;
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C;Superfamily: suppressor protein suhB
                                                                                                                                                                                                             Gene: imp2
Superfamily: suppressor protein suhB
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                                                                                                                                                                                                                                                                                             16.1%; Sco
llarity 28.5%; Pre
Conservative 54;
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     1998
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Best Local Similarity
Matches 75; Conserva
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Nature 392, 353-358, 3
A; Title: The complete
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R;Cole, S.T.; Brosc
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Best Local 5
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C;Superf
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Locince 277, 1452-1462, 1997
Arritle: The complete genome sequence of Escherichia coli K-12.

A; Reference number: A64720; MUID:97426617
A; Reference number: A64720; MUID:97426617
A; Reference number: A64720; MUID:97426617
A; Status: preliminary
A; Reference number: A64720; MUID:97426617
A; Status: preliminary
A; Reference number: A64720; MUID:97426617
A; Status: preliminary
A; Reference number: A112, Substrain MG1655
A; Reference number: A112, Substrain MG1655
A; Reference number: A3158; MUID:90202735
A; Residues: 1-140, L., 142-267 < VAN>
A; Residues: SubB
C; Complex: monemer: SubB
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A; Reference number: 21200.

A; Accession: T07795

A; Status: preliminary; translated from GB/EMBL/DDBJ

A; Molecule type: mRNA

A; Residues: 1-268 <GIL>
A; Cross-references: EMBL: U39059; NID: 91098970; PIDN: AAB19031.1; PID

A; Experimental source: strain VFNT Cherry
C; Genetics:
A; Genetics:
A; Gene: IMP3
C; Function:
A; Description: removes phosphate from myo-inositol-1-phosphate and A; Pathway: inositol phosphate metabolism
C; Superfamily: suppressor protein subB
C; Keywords: phosphoric monoester hydrolase
                                                                                                                                                                                                                                                                                                                                                                                       27;
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A;Description: EC 3.1.3.25 [validated, MUID:20213266]
                                                                                                                                                                                                                                                                                                                                             15.3%; Score 265.5; DB 2; ilarity 30.2%; Pred. No. 1.9e-13; Conservative 48; Mismatches 117;
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Species: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                   48;
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Best Local Similarity
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241 GSE--FDLTARR-
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                                                                                                                                    LVEVAQRAADAAGEVLRKYFR--QRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHA
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neither sufficient nor
                                                                 267;
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                                                                Length
                                                                  1; L
-13;
124;
                                                                th Similarity 29.6%; Pred. No. 7.5e-11.79; Conservative 44; Mismatches 11.
A; Note: inositol-1-phosphatase activity is C; Superfamily: suppressor protein subB C; Keywords: phosphoric monoester hydrolase
                                                                                                                                                                                                                                                                                                                                                              258
                                                                                                                                                                                                                                                                                                                                     AESRPTSFNVVAAGDARVHKEALDALR 336
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Best Local S
Matches 79
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Search completed: May 30, 2002, 17:15:56 Job time: 207 sec  $\omega$ 

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193
244
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                                                                               Sequence 3445, Application US/09134001C

Patent No. 6380370

GENERAL INFORMATION:
APPLICANT: Lynn Doucette-Stamm et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC-007

CURRENT APPLICATION NUMBER: US/09/134,001C

CURRENT FILING DATE: 1998-08-13
PRIOR FILING DATE: 1997-11-08
PRIOR FILING DATE: US 60/055,779
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194 LRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTTSPHLFEADAEDAFIRVRNKVK-VP
  RLLCIPIHGIRAVGTAAVNMCLVATGGADAYYEMGLHCWDMAAASVIVTEAGGT1LDATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134 HAIFGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: McAllister, George APPLICANT: Whiting, Paul J. TITLE OF INVENTION: cDNA CLONING OF INOSITOL MONOPHOSPHATASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               188 AYGSAALEIISVAKGQLAAYLTPRLQPWDFAGGLLILNEVGGIGTNLLGDKLDF --
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. Box 2000, 126 E. Lincoln Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 208; DB 4;
Pred. No. 2.4e-14
1; Mismatches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/347,471
                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Staphylococcus epidermidis US-09-134-001C-3445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4, Application US/08347471
Patent No. 5710015
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51;
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                                                                                                                                                                                                                                                                                                                                                                                                                                            12.0%;
llarity 24.5%;
Conservative 5:
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NUMBER OF SEQ ID NOS: 5674
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Best Local Similarity
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SEQ ID NO 3445
LENGTH: 281
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STREET: P
CITY: Rah
STATE: Ne
COUNTRY:
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                                                                                                                                     Esterling, Lisa E.
INVENTION: Chromosomal Markers and Diagnostic
Tests for Manic-Depressive Illness
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                                                                                                                                                                                                                             Townsend and Crew LL
Center, Eighth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: <Unknown>
PRIOR APPLICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 60/029,278
FILING DATE: 28-OCT-1996
APPLICATION NUMBER: PCT/US97/19381
FILING DATE: 28-OCT-1997
ATTORNEY/AGENT INFORMATION:
NAME: Smith, Timothy L.
REGISTRATION NUMBER: 35,367
REFERENCE/DOCKET NUMBER: 015280-297100US
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
TELEFAX: <Unknown>
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                          2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 25.8%; Pred. No. 1.9e-14; 2; Conservative 48; Mismatches 104
                                                                                                                                                                                                                                                                                              COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/091,952A
FILING DATE: 19-Apr-1999
                  Ω
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LOCATION: 1...285
COTHER INFORMATION: Xenopus IMP
SEQUENCE DESCRIPTION: SEQ ID NO: 25:
US-09-091-952A-25
                  Sevilla
                                                                                       Wade H.
                                                                                                                                                                                                                        SSEE: Townsend and
T. Two Embarcadero
San Francisco
                             Gershon, Elliot S
Badner, Judith A.
Goldin, Lynn R.
Berrettini, Wade
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              Detera-Wadleigh,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <del>:</del>:
                                                                                                                       Sanders, Alan
                                                                                                                                                                                                             CORRESPONDENCE ADDRESS ADDRESS ADDRESSEE: Townse
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AL INFORMATION
APPLICANT: Det
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                                                                                                                                                                                                                                                                                 STATE:
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                                                                                                                                                                                              NUMBER
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Best Local
GENERAL
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INVENTION: Chromosomal Markers and Diagnostic
Tests for Manic-Depressive Illness
SEQUENCES: 197
                                                                                                                                                                                                                                                             Length
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                                                                                                                                                                                                                                                           11.5%; Score 199.5; DB 1; Similarity 25.2%; Pred. No. 1.9e-13; 7; Conservative 51; Mismatches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NT APPLICATION DATA:
APPLICATION NUMBER: US/09/091,952A
FILING DATE: 19-Apr-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sevilla
                    ATTORNEY/AGENT INFORMATION:
NAME: NO. 5710015th, Robert J.
REGISTRATION NUMBER: 27,366
REFERENCE/DOCKET NUMBER: T-1160
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908) 594-7262
TELEX: (908) 594-4720
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 270 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 17, Application US/09091952A Patent No. 6458532 GENERAL INFORMATION:
                                                                          T-1160
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Yoshikawa, Takeo
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Esterling, Lisa
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
08-DECEMBER-94
I: 800
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ADDRESSEE: Townsend
                                                                                                                             TYPE: amino acids

TYPE: amino acids

TOPOLOCY: linear

MOLECULE TYPE: prot
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FILING DATE: 0 CLASSIFICATION:
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Best Local
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Matches
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Patent No. 5710015
GENERAL INFORMATION:
APPLICANT: McAllister, George
APPLICANT: Whiting, Paul J.
TITLE OF INVENTION: CDNA CLONING OF INOSITOL MONOPHOSPHATASE
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: Robert J. No. 5710015th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         288
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                              APPLICATION NUMBER: US 60/029,278
FILING DATE: 28-OCT-1996
APPLICATION NUMBER: PCT/US97/19381
FILING DATE: 28-OCT-1997
ATTORNEY/AGENT INFORMATION:
NAME: Smith, Timothy L.
REGISTRATION NUMBER: 35,367
REFERENCE/DOCKET NUMBER: 015280-297100US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMP.18p myo-inositol ID NO: 17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 26.4%; Pred. No. 4.4e-13;
Matches 67; Conservative 40; Mismatches 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: Robert J. No. 5710015th
P.O. Box 2000, 126 E. Lincoln Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                             . NAME/KEY: mat_peptide
; LOCATION: 1...288
; OTHER INFORMATION: IMP.18p
; SEQUENCE DESCRIPTION: SEQ ID NO:
US-09-091-952A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
<Unknown>
                                                                                                                                                                                                                                                                        TELEX: <Unknown>
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 285 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS: <Unknown>
TOPOLOGY: linear
MOLECULE TYPE: protein
CLASSIFICATION: <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 EAGGIVIDTSGGPL 254
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CECMDYAVTLARQAGEVVCEAIKNEMNVMLKS--SPVDLVTATDQKVEKMLISSIKEKYP
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Tests for Manic-Depressive Illness
197
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                                                                                                                                                              NAME: Smith, Timothy L.
REGISTRATION NUMBER: 35,367
REFERENCE/DOCKET NUMBER: 015280-297100US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 25.5%; Pred. No. 8.9e-13;
Matches 70; Conservative 51; Mismatches 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GDKLHWPVTAESRPTSFNVVAAGD----ARVHKE 330
               APPLICATION NUMBER: US/09/091,952A FILING DATE: 19-Apr-1999
                                                                                                   FILING DATE: 28-OCT-1996
APPLICATION NUMBER: PCT/US97/19381
FILING DATE: 28-OCT-1997
                                                                                 APPLICATION NUMBER: US 60/029,278 FILING DATE: 28-OCT-1996
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VENTION: Chromosomal
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IS-09-091-952A-28
Sequence 28, Application US/09091952A
Patent No. 6458532
GENERAL INFORMATION:
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Gershon, Elliot S.
Badner, Judith A.
Goldin, Lynn R.
Berrettini, Wade H.
Yoshikawa, Takeo
Sanders, Alan R.
                                                   <Unknown>
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SEQ ID
                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS: <Unknown>
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                   amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: mat_peptide LOCATION: 1...277
                                                                                                                                                 INFORMATION:
                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 26: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                          ;
COCATION: 1...277

COTHER INFORMATION:
SEQUENCE DESCRIPTION: SI
US-09-091-952A-26
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                                                                   PRIOR APPLICATION DATA
                                                                                                                                                                                                                                                                 <Unknown>
                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
                                                   CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                               LENGTH: 277
                                                                                                                                              AGENT
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    CURRENT
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Chromosomal Markers and Diagnostic
Tests for Manic-Depressive Illness: 197
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ADDRESSEE: Townsend and Townsend and Crew LL
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
                                                                                                                                                                                                                                                                                                                                 Score 193.5; DB 1;
Pred. No. 8.9e-13;
51; Mismatches 120;
   Version
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                                  US/08/347,471
Release #1.0,
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Badner, Judith A.
Goldin, Lynn R.
Berrettini, Wade H.
Yoshikawa, Takeo
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                                                                            ATTORNEY/AGENT INFORMATION:
NAME: No. 5710015th, Robert J.
REGISTRATION NUMBER: 27,366
REFERENCE/DOCKET NUMBER: T-1160
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                 11.2%; Sc
Similarity 25.5%; Pr
70; Conservative 51;
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MEDIUM TYPE: Diskette
                                                 08-DECEMBER-94
                                                                                                                                                              (908) 594-7262
) 594-4720
                                                                                                                                                                                                                                 277 amino acids amino acids
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 SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                               TELEX: (908) 594-4720 INFORMATION FOR SEQ ID NO:
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ZIP: 94111-3834
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                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                   linear
                                                  FILING DATE: 0 CLASSIFICATION:
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CITY: Sa
STATE: C
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US-08-347-471-2
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S-09-091-952A-26
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Matches
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                                                BAIN, GILFILLAN, & OLSTEIN
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                                                                                                                                                                                                                                                                                                                                                                              NAME: FERRARO, GREGORY D.
REGISTRATION NUMBER: 36,134
REFERENCE/DOCKET NUMBER: 325800-316
                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: PCT/US94/1046: FILING DATE: 16 SEP 94 ATTORNEY/AGENT INFORMATION:
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Inositol
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APPLICANT: Meissner, Paul et al.
TITLE OF INVENTION: Human Inositol
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciencs,
  Human Inositol
                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/461,7
FILING DATE: June 5, 1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred
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                                                                                                                                                                               INCH DISKETTE
                                         ADDRESSEE: CARELLA, BYRNE, B
ADDRESSEE: CECCHI, STEWART &
STREET: 6 BECKER FARM ROAD
CITY: ROSELAND
STATE: NEW JERSEY
COUNTRY: USA
ZIP: 07068
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 INCH DISKET
COMPUTER: IBM PS/2
OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PERFECT 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35;
                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-994-1700
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| Similarity 24.8%;
| 67; Conservative 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 265 AMINO ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           201-994-1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN
TITLE OF INVENTION: HUNNUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
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-08-461-731-2
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ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION NUMBER: 35,367

REFERENCE/DOCKET NUMBER: 015280-297100US

TELEPHONE: (415) 576-0200

TELEX: <unknown>
ORMATION FOR SEO IT
                                                                                                                                                                 2.0
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                                                              COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                            APPLICATION NUMBER: US/09/091,952A
FILING DATE: 19-Apr-1999
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/029,278
FILING DATE: 28-OCT-1996
APPLICATION NUMBER: PCT/US97/19381
FILING DATE: 28-OCT-1997
ATTORNEY/AGENT INFORMATION:
NAME: Smith, Timothy L.
REGISTRATION NUMBER: 35,367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GDKLHWPVTAESRPTSFNVVAAGD----ARVHKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human IMP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <Unknown>
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LOCATION: 1...277
OTHER INFORMATION: hun
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SEQUENCE CHARACTERISTICS
LENGTH: 277 amino a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application
Patent No. 5716806
GENERAL INFORMATION:
APPLICANT: MEISSNER,
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Best Local
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--NGWRCA 146
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                                                                                                                                       ENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILRERWIGVDGKQT
                                                                                                                                                                                                        --TSPHLFEADAEDAFIRVRNKVK
                                                                                                                                                                                                                                                                                                            VRVIGSSTLALCHLASGAADAYYQFGLHCWDLAAATVIIREAGGIVIDTSGGPLDLMVC-
                                    42;
  Length 265;
                                                                    EVLRKYFRQRVEIIDKEDHSP-VTIADREAEEAMVSVILKSFPTHAIFGEE-
                                    Indels
                                                                                                                                                                                                                              Monophosphatase H1
                      -10;
126;
core 173; DB 1;
red. No. 1.4e-10;
Mismatches 126
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Gaps

206

250

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COMPUTER READABLE FORM:
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TITLE OF INVENTION: Human Inositol Monophosphatase H1
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN,
ADDRESSEE: CECCHI, STEWART & OLSTEIN
STREET: 6 BECKER FARM ROAD
                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 173; DB 2;
Pred. No. 1.4e-10;
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                                                                                                                                                                                                                                                                                            WO PCT/US94/10465
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                                                                                                                                                                                 APPLICATION NUMBER: US/09/002,072B
FILING DATE: 09-FEB-1998
CLASSIFICATION: 435
                                                                                                                                                                                                                                           APPLICATION NUMBER: US 08/461,731
FILING DATE: 05-JUN-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --- RVVAASTREMAMLIAQALQTINY
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Patent No. 6130051
GENERAL INFORMATION:
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                      Avenue
                                                                                                                                                                                                                                                                                                                                                        36,373
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TELEPHONE: 301-309-8504
TELEFAX: 301-309-8439
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                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: WO PO
FILING DATE: 16-SEP-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                        NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,
REFERENCE/DOCKET NUMBER:
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ilarity 24.8%;
Conservative
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CITY: 9410 Key West A CITY: Rockville STATE: MD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
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                                                                                              COMPUTER READABLE FORM:
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                                                                    USA
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                                                                 COUNTRY:
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Best Local
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Pred. No. 1.4e-10;
35; Mismatches 126;
                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: FERRARO, GREGORY D.
REGISTRATION NUMBER: 36,134
REFERENCE/DOCKET NUMBER: 325800-316
TELECOMMUNICATION INFORMATION:
TSLEPHONE: 201-994-1700
TELEFAX: 201-994-1744
INFORMATION FOR SEQ ID NO: 2:
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Inositol
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US-09-314-198-2
; Sequence 2, Application US/09314198
; Patent No. 6403310
; GENERAL INFORMATION:
; APPLICANT: Meissner, Paul et al.
; TITLE OF INVENTION: Human Inosito.
; NUMBER OF SEQUENCES: 10
; CORRESPONDENCE ADDRESS:
                                                               COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 INCH DISKETTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Human Genome Scienc
STREET: 9410 Key West Avenue
CITY: Rockville
STATE: MD
COUNTRY: USA
ZIP: 20850
                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/002,07
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10.0%;
ilarity 24.8%;
Conservative 35
                                                                                                              OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PERFECT 5
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 265 AMINO ACIDS
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                          LINEAR
E: PROTEIN
                                                                                                                                                            APPLICATION NUMBER:
FILING DATE:
CLASSIFICATION:
                                                                                             IBM PS/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
ROSELAND
NEW JERSEY
                                                                                                             OPERATING SYSTEM:
SOFTWARE: WORD P
                                USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TOPOLOGY: L; MOLECULE TYPE: US-09-314-199-2
                                              07068
                                                                                                COMPUTER:
                              COUNTRY:
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|GAKCV 68
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                                                   Version #1.30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10.0%; Score 173; DB 4; 24.8%; Pred. No. 1.4e-10; tive 35; Mismatches 126
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                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US94/10465
FILING DATE: 16-SEP-1994
ATTORNEY/AGENT INFORMATION:
NAME: Brookes, A. Anders
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, '
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/314,198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESRPTSFNVVAAGD - - - ARVHKEALDALRW
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Human Inositol
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PCT-US94-10465-3
; Sequence 3, Application PC/TUS9410465
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 INCH DISKETTE
COMPUTER: IBM PS/2
                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/002,072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35;
                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301-309-8504
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                                                                                                                                                                                                                                                                                                                                                          zo5 amino acids
STRANDEDNESS: s'-
TOPOLOGY.
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS
LENGTH: 265 amino acid
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TITLE OF INVENTION: HUI
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
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67; Conserv
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CITY: ROSELAND
STATE: NEW JER
                                                                                                                 CLASSIFICATION:
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US-09-314-198-2
                                                                                                   FILING DATE:
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1.4e-10;
ches 126;
                                                                                                                                                                                                                                                                                                                                                                                                     Score 173; DB pred. No. 1.4e<sup>-</sup>35; Mismatches
                                                                                                                                                         NAME: FERRARO, GREGORY D.
REGISTRATION NUMBER: 36,134
REFERENCE/DOCKET NUMBER: 325800-127
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-994-1700
TELEFAX: 201-994-1744
INFORMATION FOR SEQ ID 10: 3:
SEQUENCE CHARACTERIS: 1.CS:
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                                                PCT/US94/10465
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OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PE: FECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US94
FILING DATE: concurrently
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                    35;
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illarity 24.8%;
Conservative 35
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ATTORNEY/AGENT INFORMATION:
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AMINO ACID
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67; Conserv
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TOPOLOGY: LI
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PCT-US94-10465-3
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1 MLSSSSSTHSDTSPFPGLAS......VVAAGDARVHKEALDALRWR 338
                                                                                      November 17, 2002, 16:37:33; Search time 44 Seconds (without alignments) 226.022 Million cell updated
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GenCore version 5.1.3
(c) 1993 - 2002 Compugen Ltd.
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Sequence:
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2: /cgn2\_6/ptodata/1/iaa/5B\_COMB.pep:\*
3: /cgn2\_6/ptodata/1/iaa/6A\_COMB.pep:\*
4: /cgn2\_6/ptodata/1/iaa/6B\_COMB.pep:\*
5: /cgn2\_6/ptodata/1/iaa/PCTUS\_COMB.pep:\*
6: /cgn2\_6/ptodata/1/iaa/PCTUS\_COMB.pep:\*
6: /cgn2\_6/ptodata/1/iaa/bcxfiles1.pep:\*
and is the number of results predi:ted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

seq length: 0 seq length: 2000000000

Minimum DB Maximum DB

# and is derived by analysis of the total score distribution.

	Description	guence 17, Ap	ence 17,	27, Ap	25, Ap	e 3445, A	4, Appl	17, App	2, Appl	26, App	28, App	2, Appl	e 2, Appl	2, Appl	_	e 3, Appl	5015, A	7	19, App	9, Appl	3, Appl	55, App	55, App	_	Sequence 2, Appli	2, Appl	106, A	Sequence 4, Appli
SUMMARIES	ID	ns	US-09-677-064-17	-09-091-952A-2	-952A-	US-09-134-001C-3445	-08-347-4	US-09-091-952A-17	-08-347-47	-09-091-952A-2	0	-08-461-73	-09-002-07	-60-	09-314-198-	894-1046	-09-134-001	-804-22	T-US91-0942	-08-804-22	-08-804-198-	-09-303-064-	9-086-503-5	-962-28	-61	-0	US-09-413-814-106	-0
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22 25 25 25 25 25 25 25 25 25 25 25 25 2		
Sequence Seq	sm in	Length 267; Indels 15; Garames
US-09-320-878-2 US-09-105-537-33 US-09-105-537-6 US-08-975-762-54 US-09-295-028-54 US-09-106-582-54 US-09-106-582-54 US-09-106-582-54 US-09-106-582-54 US-09-106-1183 US-08-46-033-183 US-08-464-134-183 US-08-464-134-183 US-08-461-361-183 US-08-461-361-183 US-08-461-361-183 US-08-461-361-183 US-08-461-361-183 US-08-461-361-183 US-08-461-361-183 US-08-461-361-183 US-08-461-361-183 US-09-320-878-1 US-09-320-878-1	ALIGNMENTS  18442B  J.  yog/118,442B  7055,446  1	Score 255.5; DB 4; Le Pred. No. 1.4e-19;  1; Mismatches 112; In YFRQRVEIIDKEDHSPVTIADREA
うせよよななななることのころのちょん	A. Cont. Cont. and and 08-108-108-108-108-108-108-109-109-109-109-109-109-109-109-109-109	8%; S 41; 41; VLRKYF ::     IIRKGF :     TDDPTW             NGOEIS     NGSPIK
3739 11877 340 340 340 406 546 546 5910 2910 2910 2910 2910 2910 4551 4613	ion US att, S gyu rry R. njamin Genes 1998- 1997- NUMBER 1997- 1997- 1997- 1997- 1997- 1997-	14.8% rity 30.3% nservative AQRAADAAGEVL      :     :: AVEAAKSAGEII GWRCAENSA GWRCAENSA   : :  TAVRGKQTTLNG               TAVRGKGAFLNGCYAYAL   :    :   IRMCGSLALNMC
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00000000000000000000000000000000000000	ESULT 1 S-09-118-4 Sequence Patent NG GENERAL 1 APPLICAN APPLICAN APPLICAN APPLICAN TITLE ON TITLE ON TITLE ON EARLIER EARLIER EARLIER EARLIER EARLIER EARLIER CORRENT CORRENT CORRENT EARLIER EARLIER EARLIER ANDMBER ( SOFTWAR) SEQ ID NG LENGTH TYPE:	Ouery Best L Matche 7 7 13 19 6 6 12 12 12
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                                                                                                                    APPLICANT: Wang, Hongyu

APPLICANT: Wang, Hongyu

TITLE OF INVENTION: Genes Controlling Phytate Metabolism in

TITLE OF INVENTION: Plants and Uses Thereof

FILE REFERENCE: 0706D

CURRENT APPLICATION NUMBER: US/09/677,064

CURRENT FILING DATE: 2000-09-29

PRIOR FILING DATE: 1997-08-11

PRIOR FILING DATE: 1997-08-11

PRIOR FILING DATE: 1997-08-08

PRIOR FILING DATE: 1997-07-28

PRIOR FILING DATE: 1997-07-28

PRIOR FILING DATE: 1998-07-17
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Esterling, Lisa E.
INVENTION: Chromosomal Markers and Diagnostic
Tests for Manic-Depressive Illness
                                                                                                                                                                                                                                                                                                                                                                                                                    Length
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                                                                                                                                                                                                                                                                                                                                                                                                        14.8%; Score 255.5; DB 4; 30.3%; Pred. No. 1.4e-19;
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                                                                                                                                                                                                                                                                                                                              FastSEQ for Windows Version
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Gershon, Elliot S.
Badner, Judith A.
Goldin, Lynn R.
Berrettin1, Wade H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 27, Liplication US/09091952A Patent No. 6458532 GENERAL INFORMATION:
                                                                       Sequence 17, Application US/09677064 Patent No. 6291224
                                                                                             GENERAL INFORMATION:
APPLICANT: Mang, Hongyu
                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                            1 Similarity 73; Conserv
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LENGTH: 267
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                                    Townsend and Crew LLP Center, Eighth Floor
                                                                                                                                         COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette

COMPUTER: IBM Compatible

COMPUTER: IBM Compatible

OPERATING SYSTEM: DOS

SOFTWARE: FastSEO for Windows Version 2.0

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/091,952A

FILING DATE: 19-Apr-1999

CLASSIFICATION: <UNKNOWN>

PRIOR APPLICATION NUMBER: US 60/029,278

FILING DATE: 28-OCT-1996

APPLICATION NUMBER: PCT/US97/19381

FILING DATE: 28-OCT-1997

ATTORNEY/AGENT INFORMATION:

NAME: Smith, Timothy L.

REGISTRATION NUMBER: 35,367

REFERENCE/DOCKET NUMBER: 015280-297100US

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELEPHONE: (415) 576-0200
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ches 115;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12.2%; Score 211; DE Clarity 26.0%; Pred. No. 1.16 Conservative 52; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N: bovine IMP
SEQ ID NO: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSULT 4
3-09-091-952A-25
Sequence 25, Application US/09091952A
Patent No. 6458532
                                ADDRESSEE: Townsend and
STREET: Two Embarcadero
CITY: San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          277 amino acids
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; OTHER INFORMATION: bov
; SEQUENCE DESCRIPTION: SEQ IF
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                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
MOLECULE TYPE: protein
FEATURE:
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SEQUENCES:
                                                                                                            COUNTRY: USA
ZIP: 94111-3834
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version 5.1.3
- 2002 Compugen Ltd
 GenCore (c) 1993
            Copyright
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sw model using protein search, ı OM protein

Seconds ; Search time 71 Sec (without alignments) 634.348 Million cell 14:18:58 2002, 17, November Run on:

updates/sec

338

.. VVAAGDARVHKEALDALRWR 1 MLSSSSSTHSDTSPFPGLAS US-09-686-522C-14 1730 score: Sequence: Title: Perfect

BLOSUM62 Gapop 10.0 , Scoring table:

0 Gapext

residues 908470 seqs, 133250620 of Searched:

hits satisfying chosen parameters:

seq length: seq length: Minimum DB Maximum DB

otal number

length: 0 length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

A\_Geneseq\_101002:\*

| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:\*
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:\*
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:\*
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			ţ	Corn extragenic su	Partial wheat extr	Soybean extragenic	Herbicidally activ	C glutamicum prote	Corynebacterium gl	Corynebacterium gl	Aquifex pyrophilus	Aquifex VF-5 alkal	Arabidopsis thalia
SUMMARIES			ID	AAY44230 5.5. 7M	AAY44233  P1 \(\(\) \(\)	AAY44232] CUA	ABB93299	AAG90637	AAB79381	AAB79382	AAW42392	AAW42388	AAG21330
			1	i				22	22	22	19	19	21
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(DUPO ) DU PONT DE NEMOURS

98US-0082950.

24-APR-1998;

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## ALIGNMENTS

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Clone cdt2c.pk003.b20; corn extragenic suppressor protein; phytic acid biosynthetic enzyme; transformation; chimeric gene; antibody; free phosphate; phytic acid level; transgenic plant; enzyme detection; animal feed.
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                                                                                                                                  Location/Qualifiers
                                                              protein.
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               AAY44230 standard; Protein;
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                                                               suppressor
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Misc-difference
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                                                                             The present sequence is corn extragenic suppressor protein encoded by the cDNA insert in clone cdt2c.pk003.b20. This belongs to the inositol monophosphate family of proteins. The cDNA clone was isolated from corn developing tassle. The level of expression of this phytic acid biosynthetic enzyme can be altered by transforming a host cell with the chimeric gene comprising the corresponding cDNA. This is done to increase levels of free phosphate and decrease phytic acid levels in developing seeds or in the construction of transgenic plants with altered levels of the enzyme. The phytic acid biosynthetic enzymes are used to raise antibodies, for enzyme detection in cells and cell extracts. This is commercially used for animal feed.
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The present sequence is a portion of wheat extragenic suppressor protein encoded by the cDNA insert in clone wlm0.pk0010.f6. This belongs to the inositol monophosphate family of proteins. The cDNA clone was isolated from wheat seedlings. The level of expression of this phytic acid biosynthetic enzyme can be altered by transforming a host cell with the chimeric gene comprising the corresponding cDNA. This is done to increase levels of free phosphate and decrease phytic acid levels in developing seeds or in the construction of transgenic plants with altered levels of the enzyme. The phytic acid biosynthetic enzymes are used to raise antibodies, for enzyme detection in cells and cell extracts. This is
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Pred. No. 9.8e-125;
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larity 63.0%; Pred. No. 2.5e-101;
Conservative 42; Mismatches 44;
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 transgenic plant;
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                                                                                                                                                   phytic acid biosynthetic
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                                                              99WO-US08791
                                                                                                                                                           in transgenic plants
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N-PSDB; AAZ29167.
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level;
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acid
                Glycine max
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The invention relates to identifying target proteins (ABB90790-ABB94016) for herbicidally active compounds, comprising aligning and comparing nucleic acid or amino acid sequences from plant organisms using with nucleic acid or amino acid sequences from non-plant organisms using suitable search parameters, where plant sequences having an E-value greater by a factor of 3 than the E-value of most similar non-plant sequences are selected. The polypeptides or nucleic acids encoding them are useful for identifying modulators. The identified modulators are useful as herbicides.
                                                                                                                                                                                                                                                                                                                                                           Identifying plant target proteins for herbicidally active compounds, comprising aligning and comparing nucleic acid or amino acid sequences from plant with nucleic acid or amino acid sequences from non-plant
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Pred. No. 1.7e-96;
; Mismatches 35;
   ID NO
                                     agriculture; herbicide
     SEO
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  active polypeptide
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69.5%;
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                                                                                                                                                                                                                                                                                                                           WPI; 2002-269010/31
                                     plant;
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                                                                                                           WO200210210-A2
Herbicidally
                                                                                                                                                                                28-AUG-2001;
                                                                       Arabidopsis
                                                                                                                                             07-FEB-2002
                                                                                                                                                                                                                                                                                         Tietjen K,
                                                                                                                                                                                                                                                                                                                                                                                                                    organisms
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14-JUL-1999;

14-JUL-1999;

14-JUL-1999;

13-AUG-1999;

14-JUL-1999;

13-SEP-1999;

03-SEP-1999;

03-SEP-1999;

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ologous gene
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention provides a number of nucleotide and protein sequences from the Coryneform bacterium Corynebacterium glutamicum. Tare useful for identifying the mutation point of a gene derived from mutant of coryneform bacterium, measuring expression amount and analysing the expression profile or expression pattern of a gene derifrom Coryneform bacterium. Coryneform bacteria are useful for producing amino acids, nucleic acids, vitamins, saccharides and organic acids, particularly L-lysine. The present sequence is a protein described in the exemplification of the invention.

Note: The sequence data for this patent did not form part of the print specification, but was obtained in electronic format directly from the European Patent Office.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124
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                                                                                                                                                                                                                                                                             oj.
                                       amino acid synthesis; vitamin; saccharide;
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                                                                                                                                                                                                                                                                                                                                                            Novel polynucleotides derived from Coryneform bacteria, for i mutation point of a gene, measuring expression of a gene, ana expression profile or pattern of a gene and identifying homol
                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 17; SEQ ID NO: 4391; 246pp + Sequence Listing; English.
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                                                                                                                                                                                                                                                                           S, Hayashi M,
Ozaki A;
           ID NO: 4391
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--GGDAVATNGILHDETLDRLK
           glutamicum protein fragment SEQ
                                                                                                                                                                                                                                                                            Mizoguchi H, Ando
Senoh A, Ikeda M,
                                                                                                                                                                                          16-DEC-1999; 99JP-0377484.
07-APR-2000; 2000JP-0159162.
03-AUG-2000; 2000JP-0280988.
                                                                                                                                                                                                                                                   (KYOW ) KYOWA HAKKO KOGYO KK
                                                                                                                                                                  2000EP-0127688
                                                                               Corynebacterium glutamicum.
                                     Coryneform bacterium; a organic acid synthesis.
                                                                                                                                                                                                                                                                                                                     WPI; 2001-376931/40
N-PSDB; AAH65856.
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                                                                                                                                      20-JUN-2001
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Tateishi
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enzyme
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                                                                    Corynebacterium glutamicum; carbon metabolism and energy production; SMP protein; sugar metabolism and oxidative phosphorylation protein; fine chemical production; organic acid; proteinogenic amino acid; nonproteinogenic amino acid; purine base; pyrimidine base; nucleoside; nucleotide; lipid; saturated fatty acid; unsaturated fatty acid; diol; carbohydrate; aromatic compound; vitamin; cofactor; polyketide; enzymediagnosis; Corynebacterium diphtheriae; evolutionary study.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                encoding a production o acids,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sugar
                                                   ID NO:278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Haberhauer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino
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                                                    SEO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New isolated Corynebacterium glutamicum nucleic a metabolism and oxidative phosphorylation protein modulation of production of fine chemicals e.g. a carbohydrates or enzymes -
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                                                    sedneuce
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                                                   protein
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990E-1031412.
990E-1031413.
990E-1031424.
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990E-1031431.
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990E-1031434.
990E-1031510.
990E-1031510.
990E-1032227.
990E-1032230.
990E-1032924.
990E-1032973.
990E-104208.
990E-1042076.
990E-1042086.
990E-1042086.
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standard; Protein;
                                                    Corynebacterium glutamicum
                                                                                                                                          Corynebacterium glutamicum
                                   entry)
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                                 (first
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N-PSDB; AAF71498.
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                                                                                                                                                           WO200100844-A2
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metabolism and oxidative phosphorylation (SMP) proteins given in
AAB79243 to AAB 79633 which are involved in carbon metabolism and
energy production. The C. glutamicum SMP gene can be used in vectors
(11) for expression in host cells and production or modulation of
production of fine chemicals, such as, an organic acid, a proteinogenic
or nonproteinogenic amino acid (preferred), a purine or pyrimidine base,
a nucleoside, a nucleotide, a lipid, a saturated or unsaturated fatty
acid, a diol, a carbohydrate, an aromatic compound, a vitamin, a
cofactor, a polyketide, or an enzyme. The presence of (I) or SMP proteins
(III) encoded by them are used for diagnosing the presence or activity of
containing them are used for diagnosing the presence or activity of
containing them are used for map genomes of organisms related to
containing them are used to map genomes of organisms related to
containing them are used to map genomes of organisms related to
containing them are used for all determining SMP protein regions required
for function, in modulating SMP protein activity, in modulating the
metabolism of sugars, and in modulating high-energy molecule production
containing cell (i.e. ATP, NADPH).
                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleoside;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Corynebacterium glutamicum; carbon metabolism and energy production; SMP protein; sugar metabolism and oxidative phosphorylation protein; fine chemical production; organic acid; proteinogenic amino acid; nucleoside; pyrimidine base; nucleoside; nucleotide; lipid; saturated fatty acid; unsaturated fatty acid; diol; carbohydrate; aromatic compound; vitamin; cofactor; polyketide; enzymediagnosis; Corynebacterium diphtheriae; evolutionary study.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            124
                                                                                                                                                                                                                                                                                                                                                                                                                                                               81 VAQRAADAAGEV-LRKYFRQRVE1IDKEDHSPVTIADREAEEAMVSVILKSFPTHAIFGE 139
                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 LALELAELADSITLDRFEASDLEVSSKPDMTPVSDADLATEEALREKIATARPADSILGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGWRCAENSADF -- - VWVLDPIDGTKSFITGKPLFGTLIALLHNGKP GVIDQPILRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLV VIEGAGGSI DWRG - DKLHWPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RWIGVDGKQT - - TLNG - - - QEISVRSCNLLAQAYL - YTTSPHLFEADAEDAF1RVRNKV -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36;
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                                                                                                                                                                                                                                                                                                                                                                                     260;
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                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                     Score 310.5; DB 22,
Pred. No. 2.2e-23;
2; Mismatches 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -GGDAVATNGILHDETLDRLK 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAESRPISFNVVAAGDA----RVHKEALDALR 336
                                                                                                                                                                                                                                                                                                                                                                                     th 17.9%; Sc
Similarity 33.3%; Pr
91; Conservative 42;
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99DE-1031412
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Corynebacterium glutamicum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                    260 AA;
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08-JUL-1999;
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                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local (
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AAF71360 to AAF71750 encode the Corynebacterium glutamicum sugar metabolism and oxidative phosphorylation (SMP) proteins given in ABF9243 to AAB 7963 which are involved in carbon metabolism and energy production. The confidence involved in carbon metabolism and energy production. The confidence is and production or modulation of production of line chemicals, such as, an organic acid, a proteinogenic or nonproteinogenic amino acid (preferred), a purine or pyrimidine base, a nucleoside, a nucleotide, a lipid, a saturated or unsaturated fatty acid, a diol, a carbohydrate, an aromatic compound, a vitamin, a cofactor, a polyketide, or an enzyme. The presence of (I) or SMP proteins (III) encoded by them are used for diagnosing the presence or activity of containing them are used to map genomes of organisms related to containing them are used to map genomes of organisms related to containing them are used to map genomes of organisms related to containing them are used to map genomes of organisms related to in evolutionary studies, in determining SMP protein regions required for metabolism of sugars, and in modulating high-energy molecule production in the containing them are used to map are acivity, in modulating the metabolism of sugars.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               196
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81 VAQRAADAAGEV-LRKYFRQRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHAIFGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENGWRCAENSADF - - - VWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated Corynebacterium glutamicum nucleic acid encoding a metabolism and oxidative phosphorylation protein for production modulation of production of tine chemicals e.g. amino acids,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  Haberhauer
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Pred. No. 2.2e-23;
2; Mismatches 101;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    zelder
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 20; Page 540; 1246pp; English.
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99DE-1031413.
99DE-1031419.
99DE-1031424.
99DE-1031424.
99DE-1031431.
99DE-1031434.
99DE-1031510.
99DE-1031510.
99DE-1031522.
99DE-1032227.
99DE-1032227.
99DE-1032230.
99DE-1032230.
99DE-1032230.
99DE-1032973.
99DE-1032973.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C. glutamicum, identify and in evolutionary studies, in for function, in modulating metabolism of sugars, and in in a cell (i.e. ATP, NADPH).
                                                                                                                                                                                                                                                                                                                 99DE-1042086.
99DE-1042087.
99DE-1042088.
99DE-1042095.
99DE-1042123.
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33.3%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kroeger B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-061975/07
N-PSDB; AAF71499.
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08-JUL-1999;
08-JUL-1999;
08-JUL-1999;
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09-JUL-1999;
14-JUL-1999;
14-JUL-1999;
14-JUL-1999;
14-JUL-1999;
14-JUL-1999;
03-SEP-1999;
03-SEP-1999;
03-SEP-1999;
03-SEP-1999;
03-SEP-1999;
03-SEP-1999;
03-SEP-1999;
03-SEP-1999;
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Best Local 3
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AAW42388;
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                                                                                                                                                                                                                                                                                                                                         Alkaline
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N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                            Aquifex
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134
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                                                            184
This protein comprises a thermostable phosphatase, designated 28ph1, of Aquifex pyrophilus. The invention relates to claimed polynucleotides (see AAV03301-20) coding for claimed thermostable phosphatases (see AAV03301-20). Vector and host cells are used to produce the enzymes, which can be used in a claimed method to hydrolyse phosphate bonds. They can also be used in enzyme labelling processes, in certain recombinant DNA techniques, in ELISA immunoassays, in enzyme linked gene probes, in research applications for removing 5' phosphates in polynucleotides prior to end labelling, and in the pharmaceutical, food, detergent, and baking industries.
                                                                                                                                                                                                                                                                                                                           Alkaline phosphatase; thermostable enzyme; thermophilic bacterium; food; detergent; baking.
                                    RWIGVDGKQT -- TLNG -- -QEISVRSCNLLAQAYL-YTTSPHLFEADAEDAFIRVRNKV-
                                                            RWWASEGAGAWRTFNGSSPRKLSVSQVSKLDDASLSFSSLSGWAERDLRDQFVSLTDTTW
                                                                                    KVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRG-DKLHWPV
                                                                                                  food
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              - useful in pharmaceutical,
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larity 29.8%; Pred. No. 7.7e-21;
Conservative 53; Mismatches 105;
                                                                                                                                      TAESRPISFNVVAAGDA----RVHKEALDALR 336
                                                                                                                                                    --GGDAVATNGILHDETLDRLK
                                                                                                                                                                                                                                                                                                   (28ph1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (RECO-) RECOMBINANT BIOCATALYSIS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; Page 95; 128pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Thermostable phosphatase(s) - usedetergent, and baking industries
                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                   Aquifex pyrophilus phosphatase
                                                                                                                                                                                                                            standard; Protein;
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                                                                                                                                                                                                                                                                             entry)
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Best Local Similarity
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N-PSDB; AAV03317.
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                                                                                                                                                                                                                                                                            22-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                  24-DEC-1997
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              thermophilic bacterium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (34A1A) of Aquifex VF5, a marine bacterium that grows optimally at 85-90 degC and pH 6.8. Its amino acid sequence, deduced from an isolated polynucleotide (see AAV03309), shows 57% identity to Escherichia coli suppressor protein suhB. The invention relates to claimed polynucleotides (see AAV03301-09 and AAV03310-20) coding is claimed thermostable phosphatases (see AAW42380-95). Vector and it enzyme labelling processes, in recombinant DNA techniques, in ELISA, in enzyme linked gene probes, in research applications for removing 5' phosphates in polynucleotides prior to end labelling, and in the characteristics.
HAIFGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alkaline phosphatase
                           EDAFIRVR
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28.5%; Pred. No. 4e-20;
ive 54; Mismatches 1
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S-0135629.

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 24 - MAY - 1999;

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                                                                                  RNKVKVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWR
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990S-0123180.
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990S-0126264.
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PR 02-AuG-1999; 99us-0146589.
PR 04-AuG-1999; 99us-0147204.
PR 04-AuG-1999; 99us-0147202.
PR 05-AuG-1999; 99us-0147302.
PR 05-AuG-1999; 99us-0147302.
PR 05-AuG-1999; 99us-0147419.
PR 05-AuG-1999; 99us-0147419.
PR 10-AuG-1999; 99us-0147419.
PR 11-AuG-1999; 99us-0147413.
PR 11-AuG-1999; 99us-0147413.
PR 11-AuG-1999; 99us-0148119.
PR 12-AuG-1999; 99us-0148119.
PR 12-AuG-1999; 99us-0148119.
PR 13-AuG-1999; 99us-0148119.
PR 13-AuG-1999; 99us-0148119.
PR 13-AuG-1999; 99us-0148119.
PR 13-AuG-1999; 99us-0148119.
PR 23-AuG-1999; 99us-015086.
PR 23-CET-1999; 99us-015086.
PR 23-CET-1999; 99us-015086.
PR 23-CET-1999; 99us-016096.
PR 23-CCT-1999; 99us-
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promoter;
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                                              Gaps
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n control; |
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                                                                                                                          LRERWIGVDGKQTTLNUQEISVRSCNLLAQAYLYT-TSPHLFEADAEDAFIRVRN-
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                               Score 267.5;
Pred. No. 6.5e
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99US-161992.
99US-0161993.
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PR 02-AUG-1999; 9908-0145918.

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hybridisation assay; genetic mapping; gene expression contro
termination sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  345
                                                                                                                                                       Score 260; DB 21;
Pred. No. 5.9e-18;
; Mismatches 152;
                                                                                                                                                                                                                                                                                                                                                                                                                                              -- LHWPVTAESRPTSFNVVAAG
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                                                                                                                                                       th 15.0%; Somilarity 26.9%; P. 92; Conservative 54;
 99US-0160981.
99US-0160989.
99US-0161404.
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05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
01-APR-1999;
06-APR-1999;
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AAG11456
ID AAG11
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        23-JUL-1999;
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pathway;
promoter;
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                                                                                                                                                                                                                           Length 371
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                                                                                                                                                                                                                        Score 260; DB 21;
Pred. No. 6.2e-18;
; Mismatches 152;
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)B; AAX24412.
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                                       Maize myo-inositol
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                                                                                                                      W09905298-A1
                                                               Myo-inositol
phytic acid;
                                                                                                                                                                   -JUL-1998;
                                                                                                                                                                                       18-MAY-1998;
22-JUL-1997;
28-JUL-1997;
08-AUG-1997;
11-AUG-1997;
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                -JUN-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 260; DB 21;
Pred. No. 6.9e-18;
; Mismatches 152
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 990s-0155486.

990s-0156458.

990s-0156596.

990s-0157117.

990s-0157865.

990s-0157865.

990s-0158232.

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92; Conserv
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SEP-1999;
SEP-1999;
SEP-1999;
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S-OCT-1999;
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AAW97883
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This is the amino acid sequence of maize myo-inositol
monophosphatase-3, an enzyme involved in the metabolism of
phytate. cDNA (see AAX24410) encoding the enzyme was isolated from
a maize immature ear cDNA library. Polynucleotides (see AAX24400,
AAX24403, AAX24407 and AAX24410-12) encoding maize
phosphatidylinositol-3-kinase (see AAW97880), myo-inositol
1,3,4-triphosphate 5/6-kinase (see AAW97881), myo-inositol
enzymes involved in phytate metabolism, are claimed. The
invention relates to the use of such genes to reduce the
levels of phytate, and/or increase the levels of non-phytate
phosphorus, in plants used for food or feed. The genes are
especially used to improve the nutritional content of plants such
as corn and soybean. Transgenic plants, and seed produced by them,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polynucleotides controlling phytate metabolism in plants -
ul for improving the nutritional content of plants, by enhancing
is of non-phytate phosphorus, and reducing phytate levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from
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                                                                                              maize; corn; phytate; animal nutrition; feedstuff; food
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nes 112;
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Pred. No. 1.1e
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Martino-Catt SJ,
                                               monophosphatase-3
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                                                                                              monophosphatase-3;
transgenic plant;
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97US-0055526.
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larity 30.3%;
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Jenetic ma
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Search completed: November 17, 2002, 16:39:13 Job time : 99 secs

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 GenCore version (c) 1993 - 2002
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BLOSUM62 Gapop 10.0 , Gapext Scoring table:

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residues 206047115 671580 seqs, Searched 671580

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Database

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printed, Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being prand is derived by analysis of the total score distribution.

## SUMMARIES

| Description         | П      | Q92m31 rhizobium m | Q8u945 agrobacteri |        | Q9a613 caulobacter | Q8ydx6 brucella me | Q9kwb5 agrobacteri | Q98h43 rhizobium l | P73806 synechocyst | Q988q3 rhizobium l | Q53743 streptomyce | Q8rjw8 streptomyce | Q8zcr8 yersinia pe |     | Q9k4bl streptomyce | P95189 mycobacteri |
|---------------------|--------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-----|--------------------|--------------------|
| ID                  | Q9T021 | Q92M31             | Q8U945             | Q930E4 | Q9A643             | 9X0X80             | Q9KWB5             | Q98H43             | P73806             | 098803             | Q53743             | Q8RJW8             |                    |     | Q9K4B1             | P95189             |
| DB                  | 10     |                    |                    |        | 16                 |                    | 7                  | 16                 | 16                 | 16                 | ~                  | 7                  | 16                 | 16  | 16                 | 16                 |
| Length              | 286    | 259                | 297                | 308    | 278                | 272                | 263                | 262                | 267                | 239                | 273                | 268                | 267                | 255 | 266                | 260                |
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| 9m8s<br>94f0<br>8x2e<br>8x4m<br>8yt1<br>8yt1                               | cg2 bru<br>6m0 agr<br>1w3 bru<br>910 agr<br>q12 hal<br>rq1 rhi | 9sal5 arabidopsi. 1487 methylomicr 74542 synechocys 8ygm7 brucella m 98d39 rhizobium 8u602 agrobacter | 0546 agrobacteri<br>Bucq5 agrobacteri<br>98np3 rhizobium<br>92x03 rhizobium<br>91uz5 mus muscul<br>8y852 listeria m<br>8uea3 agrobacter<br>1493 caenorhabdi<br>r6d4 agrobacteri |
|--|--|---|---|
| 10 Q9M8S8<br>10 Q94F00<br>16 Q8X2E6<br>16 Q8Z4M9<br>16 Q8YT10<br>16 Q8YT10 | 6 08YC<br>6 08YC<br>6 08YI<br>6 08YI<br>7 09HQ<br>6 092R       | 0 09SA1<br>0 09SA1<br>0 09SA1<br>6 09YGM<br>6 098D3<br>6 098D60                                       | 03054<br>080C<br>098N<br>092X<br>091U<br>081B<br>02349<br>0986D   |
| 23<br>26<br>26<br>27<br>27<br>27   | 2266<br>2266<br>2766<br>2766                                   | 222230<br>222230<br>222230  | 8 272<br>8 272<br>7 275<br>7 294<br>7 290<br>6 304<br>6 319   |
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## ALIGNMENTS

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O1-MAY-2000 (TrEMBLre. 13, Created)

O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)

O1-JUN-2001 (TrEMBLrel. 17, Last annotation update)

Inositol monophosphatase-like protein.

T22F8.20 OR AT4G39120.

Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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F.X.;
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EU Arabidopsis sequencing project;

Submitted (MAR-2000) to the EMBL/GenBank/DDBJ da

EMBL; AL161594; CAB80575.1; -.

EMBL; AL161594; CAB80575.1; -.

InterPro; IPR000760; Inositol_P.

Pfam; PF00459; inositol_P; 1.

PROSITE; PS00629; IMP_1; 1.

SEQUENCE 286 AA; 31635 MW; 5C2BB2BA90FD10BB
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SEQUENCE FROM N.A.
Bevan M., Zimmermann W., Grueneisen A., Wambur
Mewes H.W., Mayer K.F.X., Schueller C.;
Submitted (MAY-1999) to the EMBL/GenBank/DDBJ
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EU Arabidopsis sequencing project;
Submitted (MAR-1999) to the EMBL/GenBank/DDBJ
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Zimmermann W., Grueneisen A., Wambutt R., Kalj
Smith A., Mewes H.W., Lemcke K., Mayer K.F.X.;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ
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R EMBL; AL591791; CAC47404.1; -.
R InterPro; IPR000760; Inositol_P.
R InterPro; IPR000760; Inositol_P.
R PROSITE; PS00094; C5_MTASE_1; UNKNOWN_1.
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S., Gloux S
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   286;
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01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Putative monophosphatase protein.
R02825 OR SMC04042.
Rhizobium meliloti (Sinorhizobium meliloti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae
   Length
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 Score 1020; DB 10;
Pred. No. 2.3e-74;
; Mismatches 35;
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larity 44.0%; Pred. No. 1.5e-36;
Conservative 48; Mismatches 73;
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"The genome of the natural genetic engineer Agrobacterium tumefaciens
C58.";
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Rhizobiaceae group;
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Q8U945;
Q8U945;
Q1-JUN-2002 (TrEMBLrel. 21, Last sequence update)
Q1-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Q1-JUN-2002 (TrEMBLrel. 21, Last sequence update)
Q1-JUN-2002 (
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Pred. No. 2.3e-34;
1; Mismatches 73;
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Science 294:2323-2328(2001).
EMBL; AE009319; AAL44693.1; ALT_INIT.
EMBL; AE008295; AAK89535.1; -.
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Inositol monophosphatase CC2252.
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                                                    NCBI_TaxID=155892;
                                                                       SEQUENCE FROM N.A
                                           Caulobacter
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TIGR;
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SEQUENCE FROM N.A.
STRAIN=1021;
MEDLINE=21396509; PubMed=11481432;
MEDLINE=21396509; PubMed=11481432;
MEDLINE=21396509; PubMed=11481432;
A Barloy-Hubler F., Bowser L., Capela D., Galibert F., Gouzy J., A Gurjal M., Hong A., Huizar L., Hyman R.W., Kahn D., Kahn M.L., Kalman S., Keating D.H., Palm C., Peck M.C., Surzycki R., Wells Yeh K.-C., Davis R.W., Federspiel N.A., Long S.R.;
"Nucleotide sequence and predicted functions of the entire Sinorhizobium meliloti pSymA megaplasmid.":
Proc. Natl. Acad. Sci. U.S.A. 98:9883-9888(2001).
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    GCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVT
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01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Putative inositol monophosphatase.
RA0254 OR SMA0483.
Rhizobium meliloti (Sinorhizobium meliloti).
Plasmid pSymA (megaplasmid 1).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae
Rhizobiaceae; Sinorhizobium.
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             Last sequence update)
Last annotation update)
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pred. No. 6e-31;
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39.6%;
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Nierman W.C., Feldblyum T.V., Laub M.T., Paulsen I.T., Nelson K.E.,
Nierman W.C., Feldblyum T.V., Laub M.T., Paulsen I.T., Nelson K.E.,
Eisen J., Heidelberg J.F., Alley M.R.K., Ohta N., Maddock J.R.,
Potocka I., Nelson W.C., Newton A., Stephens C., Phadke N.D., Ely B.,
DeBoy R.T., Dodson R.J., Durkin A.S., Gwinn M.L., Haft D.H.,
Kolonay J.F., Smit J., Craven M.B., Khouri H., Shetty J., Berry K.,
Utterback T., Tran K., Wolf A., Vamathevan J., Ermolaeva M., White O.,
Salzberg S.L., Venter J.C., Shapiro L., Fraser C.M.;
"Complete genome sequence of Caulobacter crescentus.";
Proc. Natl. Acad. Sci. U.S.A. 98:4136-4141(2001).
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MEDLINE-20020109; PubMed=11756688;
DelVecchio V.G., Kapatral V., Redkar R.J., Patra G., Mujer C., Los Ivanova N., Anderson I., Bhattacharyya A., Lykidis A., Reznik G., Jablonski L., Larsen N., D'Souza M., Bernal A., Mazur M., Goltsman Selkov E., Elzer P.H., Hagius S., O'Callaghan D., Letesson J.-J., Haselkorn R., Kyrpides N., Overbeek R.;
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                                                                                                                                       subdivision; Caulobacter
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40.8%; Pred. No. 1.6e-30;
:ive 48; Mismatches 88;
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InterPro; IPR000760; Inositol_P.
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Brucellaceae; Brucella.
NCBI_TaxID=29459;
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                                                                                               Caulobacter crescentus.
Bacteria; Proteobacteria
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STRAIN=MAFF03-01724; PLASMID=PRI1724;
Moriguchi K., Maeda Y., Satou M., Kataoka M., Tanaka N., Yoshida
Moriguchi K., Maeda Y., Satou M., Kataoka M., Tanaka N., Yoshida
"Analysis of unique variable region of a plant root inducing plas
"Analysis of unique variable region of a plant root inducing plas
PRI1724, by the construction of its physical map and library.";
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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indicates its chimerical structure between Ti and Sym plasmid
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases.
                          the facultative intracellular pathoge
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SEQUENCE FROM'N.A.
STRAIN=MAFF03-01724; PLASMID=PRI1724;
Moriguchi K., Nishida T., Maeda Y., Tanaka N., Yoshida K.;
Moriguchi K., Nishida T., Maeda Y., Tanaka N., Yoshida K.;
"Genome structure of Ri plasmid (1):Construction of linking "Genome structure of Ri plasmid (1):Construction of linking and physical map of pRi1724 in Japanese Agrobacterium.";
and physical map of pRi1724 in Japanese Agrobacterium.";
                                                                                                                                                                                                                                                                                                  Length
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SEQUENCE FROM N.A.
STRAIN-MAFF03-01724; PLASMID-PRI1724;
STRAIN-MAFF03-01724; PLASMID-PRI1724;
Maeda Y., Satou M., Satuti N., Kataoka M.,
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Last sequence update)
Last annotation update)
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Pred. No. 1.9e-29;
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                                                                      99:443-448(2002)
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"The genome sequence of the facultativ
Brucella melitensis.";
Proc. Natl. Acad. Sci. U.S.A. 99:443-4
EMBL; AE009643; AAL53289.1; -.
InterPro; IPR000760; Inositol_P.
InterPro; IPR000146; In_FB_phphtase.
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PRINTS; PR00377; INFBPHPHTASE
PROSITE; PS00629; IMP_1; 1.
                                                                                                                                                                                                                                                      29222 MW;
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41.3%;
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Rhizobiaceae; Rhizobium.
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Plasmid pRil724.
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01-OCT-2000
01-DEC-2001
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Moriguchi K., Maeda Y., Satou M., Kataoka M., Tanaka N., Yoshida K.; "Analysis of unique variable region of a plant root inducing plasmid, pRi1724, by the construction of its physical map and library."; Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases. [5]
                                                                                                                                                                                                                                                                             T-DNA and
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Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
                                                                                                                                                                                                                                      Satuti N., Tanaka
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STRAIN=MAFF303099;
MEDLINE=21082930; PubMed=11214968;
Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Kimura Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto Takeuchi C., Yamada M., Tabata S.;
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Last annotation update)
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Pred. No. 3.4e-29;
i; Mismatches 82;
                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN=MAFF03-01724; PLASMID=PRI1724;
MEDLINE=20241294; PubMed~10780382;
Maeda Y., Moriguchi K., Kataoka M., Satou M.,
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                                                                                                                                                                                                                                                                          "Genome structure of Ri plasmid (1): Serits flanking regions of pRil724 in Japar rhizogenes.";
Nucleic Acids Symp. Ser. 42:67-68(1999)
EMBL; AB039932; BAA97780.1; -.
EMBL; AP002086; BAB16188.1; -.
HSSP; P29218; 11MF.
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PROSITE; PS00629; IMP_1; 1.
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larity 38.8%;
Conservative 59
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Q1-OCT-2001 (TrEMB
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Q1-JUN-2002 (TrEMB
Mono-phosphatase.
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  bacterium
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Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,
Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakara T.,
Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,
Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumura S.
Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,
Tabata S.;
"Sequence analysis of the genome of the unicellular cyanobacterium
Synechocystis sp. strain PCC6803. II. Sequence determination of the
entire genome and assignment of potential protein-coding regions.";
DNA Res. 3:109-136(1996).
EMBL; D90909; BAA17860.1; -.
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  the nitrogen-fixing symbiotic
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Bacteria; Cyanobacteria; Chroococcales; Synechocystis
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(TrEMBLrel. 02, Last sequence update)
(TrEMBLrel. 20, Last annotation update)
                                                                                                                                26.0%; Score 449; DB 16; 39.8%; Pred. No. 2.6e-28; iive 50; Mismatches 91;
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                                                                                                                                                                                                                                                                                                                                                                                                  313 RPTSFNVVAAGDARVHKEALDALR 336
"Complete genome structure of the Mesorhizobium loti.";
DNA Res. 7:331-338(2000).
EMBL; AP003001; BAB50023.1; -.
InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; PROSITE; PS00629; IMP_1; 1.
Complete proteome.
SEQUENCE 262 AA; 27882 MW; E3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000760; Inositol_P
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                29243 MW;
                                                                                                                                              llarity 39.8%;
Conservative
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                                                                                                                                               Similarity
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01-FEB-1997 (
01-FEB-1997 (
01-MAR-2002 (
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Best Local $
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SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=MAFF303099;
MEDLINE=21082930; PubMed 11214968;
Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sasamoto S., Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Kishida Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M., Takeuchi C., Yamada M., Tabata S.;
Takeuchi C., Yamada M., Tabata S.;
"Complete genome structure of the nitrogen-fixing symbiotic bacterium
                                                                                245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RAADAAGEVLRKYFRQRVEIIDKED----HSPVTIADREAEEAMVSVILKSFPTHAIFGE
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                                                                              RNKVKVPLYGCDCYAYALLASGFVD - - - IVVESGLKPYDFLSLVPVIEGAGGSITDWRGD
                   YRQCQRTAFGGDCFNYLSAASGWTAMPLVIVEADENFYDFCALIPILTGANYCFTDWQGK
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Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae
Phyllobacteriaceae; Mesorhizobium.
NCBI_TaxID=381;
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01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
01-OCT-2001 (TrEMBLrel. 18, Last annotation update)
N-amidino-scyllo-inosamine-4-phosphate phosphatase.
MLL6642.
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18.18; Score 417; DB 16;
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DNA Res. 7:331-338(2000).
EMBL; AP003009; BAB52894.1; -.
InterPro; IPR000760; Inositol_P
Pfam; PF00459; inositol_P: 1.
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Best Local Similarity 47.4
Matches 72; Conservative
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GGECYAFAMLAAG
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Complete proteome
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InterPro; lences
of am: PF00459; i
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228:562-569(1995)

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Eur. J. Biochem. 22
[2]
SEQUENCE FROM N.A.
STRAIN-NRRL3817;
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01-MAR-2002
01-MAR-2002
01-JUN-2002
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                                                                                                                           STRAIN-ATCC12461;
MEDLINE-96139493; PubMed-8576156;
Tercero J.A., Espinosa J.C., Lacalle R.A., Jimenez A.;
Trecero J.A., Espinosa J.C., Lacalle R.A., Jimenez A.;
The biosynthetic pathway of the aminonucleoside antibiotic Pur as deduced from the molecular analysis of the pur cluster of Streptomyces alboniger.";
J. Biol. Chem. 271:1579-1590(1996).

EMBL; X92429; CAA63164.1; -.
HSSP; P29218; 11MF.
InterPro; IPR000760; Inositol_P.
R Pfam; PF00459; inositol_P;
R PROSITE; PS00629; IMP_1; 1.
SEQUENCE 273 AA; 29090 MW; C68A5E6240DF38DB CRC64;
                                                         Streptomyces lipmanii (Streptomyces alboniger).
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomycetaceae; StreptomyCBI_TaxID=1892;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-NRRL3817;
MEDLINE-95255257; PubMed-7737149;
Barrasa M.I., Tercero J.A., Lacalle R.A., Jimenez A.;
"The ardl gene from Streptomyces capreolus encodes a polypept the ABC-transporters superfamily which confers resistance to aminonucleoside antiblotic A201A.";
                                                                                                                                                                        of
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Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Pseudonocardineae; Actinosynnemataceae;
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Last sequence update)
Last annotation update
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Pred. No. 1.3e-17;
3; Mismatches 115;
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32.3%;
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           01-NOV-1996 (TrEMBLrel. 01-NOV-1996 (TrEMBLrel. 01-JUN-2002 (TrEMBLrel. Mono-phosphatase.
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86; Conserv
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01-JUN-2002
01-JUN-2002
01-JUN-2002
Q53743;
01-NOV-1996
01-NOV-1996
01-JUN-2002
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SEQUENCE-21470413; PubMed-11586360;

A Parkhill J., Wren B.W., Thomson N.R., Titball R.W., Holden M.T.G.,

Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M.,

Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G.,

Chillingworth T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V.,

Reltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V.,

Reltwell T., Moule S., Oyston P.C.F., Quail M., Rutherford K.,

A Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.;

Rember Ad1154; CAC92150.1; -.

REMBL; AJ414154; CAC92150.1; -.

REMBL; AJ414154; CAC92150.1; -.

REMBL; AJ414154; CAC92150.1; -.

REMBL; AJ414154; CAC92150.1; -.

REMBL; PRO00169; inositol_P.

Refam; PF00459; inositol_P.

REMBL; PRO00459; inositol_P.

REMBL; PRO017E; PSO00630; IMP_2; I.

REMBL; PROSITE; PSO00630; IMP_2; I.
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                                                                                                                                                                        49;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGHGAWAREDRGTARLHVSGVDRLEAAYLSTTSLSTWDLFHSRA--AYLRLAD-
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                                                                           52586EF8AA22778E CRC64;
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Last annotation update)
Latase family protein.
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B2AD807A0778A78C
                                                                                                                       ore 302.5; DB 2;
ed. No. 1.9e-16;
Mismatches 98;
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Pred. No. 1.1e-15;
3; Mismatches 111
                     to the EMBL/GenBank/DDBJ
49.1; -.
28723 MW; 52586EF8AA22778
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01-MAR-2002 (TrEMBLrel. 20, Last seq
01-JUN-2002 (TrEMBLrel. 21, Last ann
Putative inositol monophosphatase far
                                                                                                                         17.5%; Score 31.5%; Pred.
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29155 MW;
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                                                                                                                                                                              42;
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31.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rersinia pestis.
Bacteria; Proteobacteria;
Yersinia.
NCBI_TaxID=632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
Jimenez A.;
Submitted (MAR-2002) to
EMBL; X84374; CAD27649
SEQUENCE 268 AA; 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l protein;
267 AA; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                    Query Match
Best Local Similarity
Matches 87; Conser
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                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cole S.T., Eiglmeier K., Parkhill J., James K.D., Thomson N.R., Wheeler P.R., Honore N., Garnier T., Churcher C., Harris D., Mungall K., Basham D., Brown D., Chillingworth T., Connor R., Davies R.M., Devlin K., Duthoy S., Feltwell T., Fraser A., Hamlin N., Holroyd S., Hornsby T., Jagels K., Lacroix C., Maclean J., Moule S., Murphy L., Oliver K., Quail M.A., Rajandream M.A., Rutherford K.M., Rutter S., Seeger K., Simon S., Simmonds M., Skelton J., Squares R., Squares S., Stevens K., Taylor K., Whitehead S., Woodward J.R., Barrell B.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VAQRAADAAGEVLRKYF-RQRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHAIFGE 139
LVEVAQRAADAAGEVLRKYFR--QRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHA 135
                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
NCBI_TaxID=1769;
                                                                           64 IISEECGELVGEDD-DVQWVIDPLDGTTNFIKRLPHFAVSIAVRIKGRTEVAVVYDPMRN
                                                                                                                                                                                                                175 LFEQCADFRRTGSAALDLAYVAAGRVDGFFEIGLKPWDFAGGELLVRESGGIVTDFAGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IFGEENGWRCAENSADFVWVLDPIDGTKSF1TGKPLFGTLIALLHNGKPVIGVIDQPILR
                                                                                                                                                       --APAYIRVVGK
                                                                                                                                                                                    V----KVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDK
                                                                                                                          RVRNK
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                                                                                                                        ERWIGVDGKQTTLNGQEISVRSCN-----LLAQAYLYTTSPHLFEADAEDAFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 255;
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                                                                                                                                                     123 ELFTASRGOGAQLNGYRL--RGTNAKDLDGTILATGFPFKVKQH--
                                                                                                                                                                                                                                                                                                                                                                                    01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
MONOPHOPHATASE (Putative monophosphatase).
MLO662 OR MLCB1779.29.
Mycobacterium leprae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16.4%; Score 283; DB 16;
31.4%; Pred. No. 6.5e-15;
Live 40; Mismatches 102;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Massive gene decay in the leprosy bacillus.";
Nature 409:1007-1011(2001).
EMBL; Z98271; CAB11010.1; -.
EMBL; AL583919; CAC30171.1; -.
Leproma; ML0662; -.
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                                                                                                                                                                                                                                                304 LHWPVTAESRPTSFNVVAAGDARVHKEALDAL 335
                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=21128732; PubMed=11234002;
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Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
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Conservative
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85; Conser
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01-JAN-1998 (
01-JAN-1998 (
01-JUN-2002 (
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=A3(2) / M145;

STRAIN=A3(2) / M145;

Bentley S.D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L.,

Thomson N.R., James K.D., Harris D.E., Quail M.A., Kieser H.,

Harper D., Bateman A., Brown S., Chandra G., Chen C.W., Collins M.,

Cronin A., Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S.,

Huang C.-H., Kieser T., Larke L., Murphy L., Oliver K., O'Neil S.,

Rabbinowitsch E., Rajandream M.A., Rutherford K., Rutter S.,

Seeger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,

Warren T., Wietzorrek A., Woodward J., Barrell B.G., Parkhill J.,
                                                                                                                                                                                                                                                                                                                         bacleria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomyces
NCBI_TaxID=1902;
                                                  IRVRNKV-KVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptomyces
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cerdeno A.M., Parkhill J., Barrell B.G., Rajandream M.A.; Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN=A3(2);
Seeger K.J., Harris D.;
Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9C2802DB177B243E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=A3(2);
MEDLINE=97000351; PubMed=8843436;
Redenbach M., Kieser H.M., Denapaite D., Eichner A., Kinashi H., Hopwood D.A.;
"A set of ordered co. ids and a detailed genetic and the 8 Mb Streptomyces coelicolor A3(2) chromosome.";
Mol. Microbiol. 21:77-96(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hopwood D.A.; "Complete genome sequence of the model actinomycete coelicolor A3(2)."; Nature 417:141-147(2002).
EMBL; AL359214; CAB94593.1; -. HSSP; P29218; 11MF.
                                                                                                                                                                                                                                                           update)
on update)
AARGQGAFVAVDGVPRRLAVSEVADLNSASLSFSSLSGWAQRGL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSF; F23210; LACE HSSF; F23210; LACE HSSF; F23210; LACE INTERPOST 106; AATRNA_ligasell.
InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; AA_TRNA_LIGASE_II_2; UNKNOWN_1.
PROSITE; PS00629; IMP_1; 1.
SEQUENCE 266 AA; 29083 MW; 9C2802DB177B243E C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16.1%; Score 278.5; DB 16.1arity 30.3%; Pred. No. 1.6e-14; Conservative 51; Mismatches 111;
                                                                                                                                                                                                             ¥
                                                                                                                                                                                                                                                           Last sequence up
Last annotation
                                                                                                                                                                                                             266
                                                                                                               | : || : |:|| |
-TPGPHGGSAVAT-NGETHOEVE 247
                                                                                               DKLHWPVTAESRPTSFNVVAAGDARVHKEAL
                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                        Putative monophosphatase.
SCO5208 OR SC7E4.05C.
Streptomyces coelicolor.
Bacteria; Firmicutes; Act
                                                                                                                                                                                                            PRELIMINARY
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83; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. STRAIN-A3(2);
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01-OCT-2000
01-OCT-2000
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Best Local 3
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Matches
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Q9K4B1
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9 RLAHVLADAADAA--TMDRFKALDLKVETKPDMTPVSEADKAAEELIRGHLSRARPRDSV 66
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Rearch completed: November 17, 2002, 16:41:29 by time : 95 secs

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4.5 Compugen Ltd GenCore version Copyright (c) 1993 - 2000

- protein search, using sw model OM protein

2002, 17:13:04 Мау 30, Run on:

1 updates/sec ; Search time 28.74 Seconds (without alignments) 2034.526 Million cell

US-09-686-522A-14 1730 1 MLSSSSTHSDTSPFPGLAS......vvAAGDARVHKEALDALRWR 338 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 Scoring table:

562222 seqs, 172994929 residues , Gapext 0.5 Searched:

562222 hits satisfying chosen parameters: otal number of

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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SUMMARIES

|   | Description |        | Q5.2m31 rhizobium m | Q930e4 rhizobíum m | $\sim$ | Q9kwb5 agrobacteri | Q98h43 rhizobium l | P73806 synechocyst | Q988q3 rhizobium l | Q53743 streptomyce |        | Q9cnv8 pasteurella | σ      | _      | Q9k4b1 streptomyce | P95189 mycobacteri | Q9m8s8 arabidopsis |
|---|-------------|--------|---------------------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------|--------|--------------------|--------------------|--------------------|
|   | QI          | Q9T021 | Q92M31              | Q930E4             | Q9A643 | Q9KWB5             | Q98H43             | P73806             | 098803             | 053743             | Q9HXI4 | Q9CNV8             | 032889 | 067791 | Q9K4B1             | P95189             | Q9M8S8             |
|   | DB          | 10     | 16                  | 16                 | 16     | 7                  |                    | 16                 | 9                  | 7                  |        | 16                 |        |        | 7                  | 16                 | 10                 |
|   | Length      | 286    | 259                 | 308                | 278    | 263                | 262                | 267                | 239                | 273                | 271    | 267                | 255    | 264    | 266                | 260                | 271                |
| ф | Query       | 9.     | ä                   | 7                  | 7      | ø.                 | 9                  | ď                  | 18.3               | 8                  | 9      | 9                  | 9      | 9      | 9                  | 5                  | Ŋ.                 |
|   | Ŭ           | (      |                     | æ                  |        |                    | ₹                  |                    | 317                | ┍╌                 | 6      | ထ                  | æ      | ~      | 78.                | •                  | 65.                |
|   | ັດ ົ        |        | 7                   | m                  | 4      | S                  | 9                  | 7                  | <b>6</b> 0         | 6                  | 10     | 11                 | 12     | 13     | 14                 | 15                 | 16                 |

| 0 arabidopsi. | 'n     | 2 halobacter | ll rhizobiu | 10 xyle | 5 arabido | methylomic | 2 synechocys | Q98d39 rhizobium l | 9 rh12 | 1 rhiz | agrob  | 3 rhiz | 3 rh12 | 5 mus muscu | 23493 ca | agrobacter | 9s3x5 st | 56 mus muscu | dr.      | /1 r   | dr<br>dr | 72460 strepto | 7 listeri | υ snw oc | 069216 azotobacter | se pyrococcu | 76 arabidop | 5 rhizok |
|---------------|--------|--------------|-------------|---------|-----------|------------|--------------|--------------------|--------|--------|--------|--------|--------|-------------|----------|------------|----------|--------------|----------|--------|----------|---------------|-----------|----------|--------------------|--------------|-------------|----------|
| _             | Q9KTY5 |              | $\sim$      | -       |           | P71487     |              | Q98D39             |        |        | 030546 | $\sim$ | Q92X03 | A.1         | 2349     | 09R6D4     | 983X     | 990060       | $\sim$ 1 | Q92M71 | MNA6     | P72460        | Q92CW7    | Q924B0   | 069216             | N            | O9MOY6      | 052855   |
| 10            | 16     |              |             |         | 10        |            |              | 16                 |        | 16     | ς,     | 16     | 16     | 11          | S        | 7          | 7        | 11           | ß        | 16     | Ŋ        | 7             |           | 11       |                    | 17           |             | ~        |
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| ₹.            | 14.3   | ω.           | Э.          | ω.      | ω.        | ω.         | 3            | ω.                 | ω.     | 2      | ά.     | ς.     | ά,     | 'n.         | ζ.       | 2          | ζ.       | 2            | 2.       | 2.     | 2        | ζ.            | 7         | 2        | 2                  | ς.           | α.          | _        |
| α <u>0</u>    | 248    |              | 23          | 3       |           | 23         | $\sim$       | $\sim$             | $\sim$ | $\sim$ | $\sim$ | N      | $\sim$ | -           | ₩.       |            |          |              | 21       | _      | •        | 20            | 0         | 08.      | •                  | 0            | 20          |          |
| 17            | 18     | 19           | 20          | 21      | 22        | 23         | 24           | 25                 | 26     | 27     | 28     | 29     | 30     | 31          | 32       | 33         | 34       | 35           | 36       | 37     | 38       | 39            | 40        | 41       | 42                 | 43           | 44          | 45       |

# ALIGNMENTS

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---RPLTLNSGGLCVATATDLLHRHVLEIL
                                                                 TSF--NVVAAGDARVHKEALDALRWR 338
                                                                                                                                     PRT;
                                                                            233 AEMGGEIIAAGSRELHAQALEALKGR
                                                                                                                                                                                                                                                                                                                                                                                                                                           38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9A643 PRELIMINARY;
Q9A643;
01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                     PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
ses 107; Conser
                                                                                                                                                                                                                                                                 FROM N.A.
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Best Local S
Matches 107
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                                                                                                                                     Q930E4
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Barloy-Hubler F., Barnett M.J., Becker A., Boistard P., Bothe G.,

Boutry M., Bowser L., Buhrmester J., Cadieu E., Capela D., Chain P.,

Cowie A., Davis R.W., Dreano S., Federspiel N.A., Fisher R.F.,

Gloux S., Godrie T., Goffeau A., Golding B., Gouzy J., Gurjal M.,

Hernandez-Lucas I., Hong A., Huizar L., Hyman R.W., Jones T., Kahn D.,

Kahn M.L., Kalman S., Keating D.H., Kiss E., Komp C., Lelaure V.,

Masuy D., Palm C., Peck M.C., Pohl T.M., Portetelle D., Purnelle B.,

Ramsperger U., Surzycki R., Thebault P., Vandenbol M.,

Vorhoelter F.J., Weidner S., Wells D.H., Wong K., Yeh K.-C., Batut J.;

"The composite genome of the legume symbiont Sinorhizobium meliloti.";

EMBL, AL591791; CAC47404.1; -.
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Kahn D.,
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Rhizobium meliloti (Sinorhizobium meliloti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Rhizobiaceae; Sinorhizobium.
NCBI_TaxID=382;
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Score 1020; DB 10;
Pred. No. 9.2e-75;
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Pred. No. 8.7e-37;
3; Mismatches 73;
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01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence up
01-DEC-2001 (TrEMBLrel. 19, Last annotation
PUTATIVE MONOPHOSPHATASE PROTEIN.
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MEDLINE=21368234; PubMed=11474104;
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D., Galibert F., Gouzy J.,
Kahn D., Kahn M.L.,
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                                                                       GCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVTAESRP
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MEDLINE=21396509; PubMed=11481432;
Barnett M.J., Fisher R.F., Jones T., Komp C., Abola A.P.,
Barloy-Hubler F., Bowser L., Capela D., Galibert F., Gouzy
Gurjal M., Hong A., Huizar L., Hyman R.W., Kahn D., Kahn M.
Kalman S., Keating D.H., Palm C., Peck M.C., Surzycki R.,
Yeh K.-C., Davis R.W., Federspiel N.A., Long S.R.;
"Nucleotide sequence and predicted functions of the entire
Sinorhizobium meliloti pSymA megaplasmid.";
Proc. Natl. Acad. Sci. U.S.A. 98:9883-9888(2001).
EMBL; AE007219; AAK64912.1; -.
Plasmid; Hypothetical protein; Complete proteome.
SEQUENCE 308 AA; 32657 MW; C8FE70A1785F9E96 CRC64;
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01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
PUTATIVE INOSITOL MONOPHOSPHATASE.
SMA0483.
Rhizobium meliloti (Sinorhizobium meliloti).
Plasmid pSymA (megaplasmid 1).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae; Rhizobiaceae; Sinorhizobium.
NCBI_TaxID=382;
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Yoshida K.
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                                                                                                     SEQUENCE FROM N.A.

STRAIN=ATCC 19089 / CB15;

MEDLINE=21173698; PubMed=11259647;

MEDLINE=21173698; PubMed=11259647;

Nierman W.C., Feldblyum T.V., Laub M.T., Paulsen I.T., Nelson K.I.

Nierman W.C., Feldblyum T.V., Laub M.T., Paulsen I.T., Nelson K.I.

Eisen J., Heidelberg J.F., Alley M.R.K., Ohta N., Maddock J.R.,

Potocka I., Nelson W.C., Newton A., Stephens C., Phadke N.D., Ely

DeBoy R.T., Dodson R.J., Durkin A.S., Gwinn M.L., Haft D.H.,

Kolonay J.F., Smit J., Craven M.B., Khouri H., Shetty J., Berry I.

Kolonay J.F., Smit J., Craven M.B., Khouri H., Shetty J., Berry I.

Kolonay J.F., Venter J.C., Shapiro L., Fraser C.M.;

"Complete genome sequence of Caulobacter crescentus.";

Proc. Natl. Acad. Sci. U.S.A. 98:4136-4141(2001).

EMBL; AE005895; AAK24223.1; -.

TIGR; CC2252; -.
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                                               Caulobacter crescentus.
Bacteria; Proteobacteria; alpha subdivision; Caulobacter grou
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a plant root inducing
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01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
INOSITOL MONOPHOSPHATASE FAMILY PROTEIN.
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STRAIN=MAFF03-01724; PLASMID=PRI1724;
Moriguchi K., Maeda Y., Satou M., Kataoka M.,
"Analysis of unique variable region of a plan
                                                                                                                                                                                                                                                                                                                                                                                    73 LATERLVEVAQRAAD --- AAGEVLRKYFRQRVEIIDK
                                                                                                                                                                                                                                                                   InterPro; IPR000760; Inositol_P. Pfam; PF00459; inositol_P; 2. Complete proteome. SEQUENCE 278 AA; 29688 MW; 2
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Rhizobiaceae; Rhizobium.
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Plasmid pRil724.
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                                                                                 NCBI_TaxID=69394;
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                                                                      Caulobacter
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STRAIN=MAFF03-01724; PLASMID=PRI1724;
Moriguchi K., Maeda Y., Satou M., Kataoka M., Tanaka N., Yoshida K.;
Moriguchi K., Maeda Y., Satou M., Kataoka M., Tanaka N., Yoshida K.;
"Analysis of unique variable region of a plant root inducing plasmid,
"Analysis of unique variable region of a plant root inducing plasmid,
"Analysis of unique variable region of its physical map and library.";
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases.
pRil724, by the construction.
Submitted (MAR-2000) to the EMBL/GenBank/DUDD ...
[2]
SEQUENCE FROM N.A.
STRAIN-MAFF03-01724; PLASMID-PRIl724;
Moriguchi K., Nishida T., Maeda Y., Tanaka N., Yoshida K.;
Moriguchi K., Nishida T., Maeda Y., Tanaka N., Yoshida K.;
and physical map of Ri plasmid (1):Construction of linking library and physical map of pRil724 in Japanese Agrobacterium.";
and physical map of pRil724 in Japanese Agrobacterium.";
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                                                                                                                                                                                                                                                                                          Moriguchi K., Maeda Y., Satou M., Satuti N., Kataoka M., Tanaka N. Yoshida K.;
Yoshida K.;
"The complete nucleotide sequence of a Ri (root inducing) plasmid indicates its chimerical structure between Ti and Sym plasmids.";
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases.
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82;
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Pred. No. 2.1e-29;
5; Mismatches 82
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                                                                                                                                                                                                                                                           PLASMID=PRI1724;
Satou M., Satuti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           its flanking regions of pRil724 in Japan rhizogenes.";
Nucleic Acids Symp. Ser. 42:67-68(1999).
EMBL; AB039932; BAA97780.1; -.
EMBL; AP002086; BAB16188.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN=MAFF03-01724; PLASMID=PRI1724;
MEDLINE=20241294; Pubmed=10780382;
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Pro; IPR000760; Inositol_P.
PF00459; inositol_P; 1.
TE: PS00629; IMP_1; 1.
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38.8%;
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STRAIN=MAFF03-01724;
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Best Local S
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Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

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Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

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Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

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Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Matanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

Matanabe A., Idesawa K., Ishikawa A., Ishikawa A., Ishikawa A., Ishikawa C., Ishikawa C., Ishikawa A., Ishikawa A.,

Matanabe A., Idesawa K., Ishikawa A., Ishikawa A., Ishikawa A., Ishikawa C., Ishikawa C., Ishikawa A.,

Matanabe A., Ishikawa A., Ishikawa A., Ishikawa A.,

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                                                                                             Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Phyllobacteriaceae; Mesorhizobium.
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MEDLINE=97061201; PubMed=8905231;
Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Kaneko T., Sato S., Kimura T., Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T., Hiyajima N., Hirosawa M., Sugiura M., Nakazaki N., Naruo K., Ok Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Yamada M., Yasu
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Bacteria; Cyanobacteria; Chroococcales; Synechocystis
NCBI_TaxID=1148;
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01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
EXTRAGENIC SUPPRESSOR.
SUHB OR SLL1959.
                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26.0%; Score 449; DB 16; 39.8%; Pred. No. 1.7e-28; ive 50; Mismatches 91;
      Created)
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01-OCT-2001 (TrEMBLrel. 18, 01-OCT-2001 (TrEMBLrel. 18, 01-OCT-2001 (TrEMBLrel. 18, MONO-PHOSPHATASE.
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105; Conser
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01-FEB-1997
01-FEB-1997
01-DEC-2001
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                                                                              MLL3039.
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P73806
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PTHAIFGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLH-NGKPVIGVID
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imura T.,
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SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=MAFF303099;
MEDLINE=21082930; PubMed-11214968;
Kaneko T., Nakamura Y., Sato S.; Asamizu E., Kato T., Sasamoto A. Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M., Takeuchi C., Yamada M., Tabata S.;
Takeuchi C., Yamada M., Tabata S.;
Complete genome structure of the nitrogen-fixing symbiotic bar Mesorhizobium loti.";
DNA Res. 7:331-338(2000).
EMBL; AP003009; BAB52894.1; -.
EMBL; AP003009; BAB52894.1; -.
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                                                                                                                                                                                                                                     Length 267
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Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae
Phyllobacteriaceae; Mesorhizobium.
NCBI_Tax1D=381;
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                                                                                                                                                                                                                                       DB 16;
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d. No. 3.1e-24;
Mismatches 99;
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Pred. No. 7.3e-18;
5; Mismatches 72
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KLHWPVTAESRPTSFNVVAAGDARVHKEALDALR
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Pred.
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                                                                                                                                                                                                                                                                        49;
                                                                                                                                                                                                                                                                                                           ERLVEVAQRAADAAGEVLRKYFR--
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ilarity 37.3%;
Conservative 39
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36.9%;
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Pfam; PF00459; inositol_P;
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Les 101; Conservative
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-- HSPVTIADREAEEAMVSVILKSFPTHAIFGE
                                                  Streptomyces lipmanii (Streptomyces alboniger).
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces
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                                                                                           --ATGTEAWTGGASGSSRLQTKAAGSLATAILHTNSPDRFPDFPDINFARLKDAAL
                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=ATCC12461;
MEDLINE=96139493; PubMed=8576156;
Tercero J.A., Espinosa J.C., Lacalle R.A., Jimenez A.;
The biosynthetic pathway of the aminonucleoside antibiotic F as deduced from the molecular analysis of the pur cluster of Streptomyces alboniger.";
J. Biol. Chem. 271:1579-1590(1996).
EMBL; X92429; CAA63164.1; -.
HSSP; P29218; IIMF.
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                                         ENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILF
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                                                                                                                                                                                                                               Last sequence update)
Last annotation update
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                                                                                                                                                                                                   273 AA
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Pfam; PF00459; inositol_P; 2.
PROSITE; PS00629; IMP_1; 1.
SEQUENCE 273 AA; 29090 MW; (
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RAADAAGEVLRKYFRQRVEIIDKED-
                                                                                                                         255 GCDCYAYALLASG 267
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187 GGECYAFAMLAAG 199
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86; Conser
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                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN=ATCC 15692 / PAOl;
MEDLINE=20437337; PubMed 10984043;
Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P., Hickey M.J., Brinkman F.S.L., Hufnaqle W.O., Kowalik D.J., Lagrou M. Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y., Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M., Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T., Smith K.A., Saier M.H., Hancock R.E.W., Lory S., Olson M.V.; Reizer J., Saier M.H., Hancock R.E.W., Lory S., Olson M.V.; Romplete genome sequence of Pseudomonas aeruginosa PAOl, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78 LVEVAQRAADAAGEVLRKYFR--QRVETI---DKEDHSPVTIADREAEEAMVSVILKSFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 PVRQEEFTASRGRGAALNGFRERVSGRKSLEGALIGTGFPFRDNQIDNIDNYLNMFRSLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 MENIALRAARSAGELI -- FRSTEREDVISVNEKDAKDYVTEVDRAAEQTIVAALRKAYP
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             09HXI4;
01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
EXTRAGENIC SUPPRESSOR PROTEIN SUHB.
PA3818.
Pseudomonas aeruginosa.
Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
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Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
Pasteurella.
NCBI_Tax1D-747;
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106;
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Pred. No. 9.4e-16;
4; Mismatches 106,
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HSSP; P29218; 11MF.
InterPro; 1PR000760; 1mositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00629; IMP_1; 1.
PROSITE; PS00630; IMP_2; 1.
Complete proteome.
SEQUENCE 271 AA: 29521 MW; EE
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Similarity 29.7%; Pr
82; Conservative 54;
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PRELIMINARY;
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Pfam; PF00459; inositol_P; PROSITE; PS00629; IMP_1; 1 Complete proteome. SEQUENCE 255 AA; 27040 N
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                                                                                                                 May B.J., Zhang Q., Li L.L., Paustian M.L., Whittam T.S., Kapur "Complete genomic sequence of Pasteurella multocida Pm70."; Proc. Natl. Acad. Sci. U.S.A. 98:3460-3465(2001).
EMBL; AE006067; AAK02399.1; -.
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Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycob
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01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
MONOPHOPHATASE (PUTATIVE MONOPHOSPHATASE).
MLO662 OR MLCB1779.29.
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ed. No. 2.3e-15;
Mismatches 111;
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Nature 409:1007-1011(2001).
EMBL; Z98271; CAB11010.1; -.
EMBL; AL583919; CAC30171.1; -.
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                                                        STRAIN=PM70;
MEDLINE=21145866; PubMed=11248100;
                                                                                                                                                                                                           Pfam; PF00459; inositol_P. PROSITE; PS00629; IMP_1; 1. Complete proteome. SEQUENCE
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illarity 30.6%;
Conservative 49
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                                 SEQUENCE FROM N.A.
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nv M., Huber
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MEDLINE=98196666; PubMed=9537320;
Deckert G., Warren P.V., Gaasterland T., Young W.G., Lenox A.L. Graham D.E., Overbeek R., Snead M.A., Keller M., Aujay M., Huber Feldman R.A., Short J.M., Olson G.J., Swanson R.V.;
"The complete genome of the hyperthermophilic bacterium Aquifex aeolicus.";
Nature 392:353-358(1998).
EMBL; AE000766; AAC07753.1; -.
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2633DDC72324D545 CRC64
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01-AUG-1998 (TrEMBLrel. 07, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
MYO-INOSITOL-1(OR 4)-MONOPHOSPHATASE.
IMP2 OR AQ_1983.
Aquifex aeolicus.
Bacteria; Aquificales; Aquificaceae; Aquifex.
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106;
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                                                 Score 283; DB 16;
Pred. No. 4.6e-15;
10; Mismatches 102
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| : TPGPHGGSAVAT-NGRLHQEVL
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27040 MW;
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larity 28.5%;
Conservative 54
                                                    16.4%;
31.4%;
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                                                                                        Conservative
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Best Local Similarity
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85; Conserv
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-EDAFIRV
                           YFDKLYWGAKGLGAYVNGKRIKVKDNESLKHAGVVYGFPSRSRRDISIYLNIFKDVFYEV
                                                         RNKVKVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLH
                                                                                                                                                                                                                                                                                                                                                Streptomyces
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                                                                    -GSMRRP--GAAAVDLCMVAEGIFDGMMEFEMKPWDITAGLVILKEAGG-
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STRAIN=A3(2);
Cerdeno A.M., Parkhill J., Barrell B.G., Rajandream M.A Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                     to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                    SC7E4.05C.
Streptomyces coelicolor.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae.
Actinomycetales; Streptomycineae; Streptomycetaceae; S'NCBI_TaxID=1902;
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"A set of ordered cosmids and a detailed genetic and the 8 Mb Streptomyces coelicolor A3(2) chromosome.";
Mol. Microbiol. 21:77-96(1996).
EMBL; AL359214; CAB94593.1; -.
HSSP; P29218; 11MF.
ILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTTSPHLFEADA-
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InterPro; IPR000760; Inositol_P.
Pfam; PF00459; inositol_P; 1.
PROSITE; PS00339; AA_TRNA_LIGASE_II_2; UNKNOWN_1.
PROSITE; PS00629; IMP_1; 1.
SEQUENCE 266 AA; 29083 MW; 9C2802DB177B243E (
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Pred. No. 1.1e-14;
1; Mismatches 111;
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Last sequence up
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STRAIN=A3(2);
MEDLINE=97000351; PubMed=8843436;
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Similarity 30.3%; Pr
83; Conservative 51;
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Q9K4B1;
01-OCT-2000 (TrEMBLrel. 15,
01-OCT-2000 (TrEMBLrel. 15,
01-DEC-2001 (TrEMBLrel. 15,
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Submitted (JUN-2000) to
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Seeger K.J.,
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01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
HYPOTHETICAL 27.7 KDA PROTEIN.
RV3137 OR MTCY03A2.21C.
Mycobacterium tuberculosis.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
NCBI_TaxID=1773;
                                                                                                                                                                                                                                                                                                                                                                              Harris
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EMBL; Z83867; CAB06277.1; -.
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32.5%; Pred. No. 2.8e-14;
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STRAIN=H37RV;
MEDLINE=98295987; PubMed=9634230;
MEDLINE=98295987; PubMed=9634230;
Cole S.T., Brosch R., Parkhill J.
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# SUMMARIES

| Description         | Corn extragenic su | Partial wheat extr | Soybean extragenic | C glutamicum prote | Corynebacterium gl | Corynebacterium gl | Aquifex pyrophilus | Aquifex VF-5 alkal | Arabidopsis thalia | Arabidopsis thalia | Arabidopsis thalia |
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| QI                  | AAY44230           | AAY44233           | AAY44232           | AAG90637           | AAB79381           | AAB79382           | AAW42392           | AAW42388           | AAG21330           | AAG11457           | AAG11456           |
| DB                  | 21                 | 21                 | 21                 | 22                 | 22                 | 22                 | 19                 | 19                 | 21                 | 21                 | 21                 |
| Length              | 338                | 324                | 295                | 260                | 260                | 260                | 265                | 264                | 271                | 361                | 371                |
| %<br>Query<br>Match | 100.0              | 74.8               | 61.7               | 17.9               | 17.9               | 17.9               | 16.5               | 16.1               |                    | ٦                  | 15.0               |
| Score               | 1730               | 1294.5             | 1067               | 310.5              | 310.5              | 310.5              | 286                | 279                | 267.5              | 260                | 260                |
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# ALIGNMENTS

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Clone cdt2c.pk003.b20; corn extragenic suppressor protein; phytic acid biosynthetic enzyme; transformation; chimeric gene; antibody; free phosphate; phytic acid level; transgenic plant; enzyme detection; animal feed.
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                                                                                                                                                  level
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Best Local Similarity 100.
Matches 338; Conservative
                                 WPI; 2000-072181/06
N-PSDB; AAZ29165.
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Pred. No. 8.1e-125;
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                                                                 NEMOURS
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2-APR-1999;
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Best Local Sim
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                                                                                                 Cahoon RE,
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                                                                                                                                                                                                                             Claim 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
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16-DEC-1999;
07-APR-2000;
03-AUG-2000;
                                                                                             EP1108790-A2.
                                  ylutamicum
                                                                                                                              18-DEC-2000;
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                                                                                                             20-JUN-2001
                 26-SEP-2001
                                                  Coryneform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91;
                                                                                                                                                                                                   Nakagawa
Tateishi
 AAG90637;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
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                                                                                                                                                                                                                                                                                                                                                                  2;
                                                                                                                                                                                                                 The present sequence is a soybean extragenic suppressor protein encoded by a contig assembled from portions of the cDNA inserts in clones $12.pk122.p24, src3c.pk013.g15, and sfl1n.pk003.g19. This belongs to the inositol monophosphate family of proteins. The level of expression of this phytic acid biosynthetic enzyme can be altered by transforming a host cell with the chimeric gene comprising the corresponding cDNA. This is done to increase levels of free phosphate and decrease phytic acid levels in developing seeds or in the construction of transgenic plants with altered levels of the enzyme. The phytic acid biosynthetic enzymes are used to raise antibodies, for enzyme detection in cells and cell extracts. This is commercially used for animal feed.
                                                                                                                                                                                                                                                                                                                                                                                                                    139
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                                                                                                                                                                                                                                                                                                                                                                                                                            transformation; chimeric gene; antibody; free phosphate; phytic acid level; transgenic plant; enzyme detection; animal
                                                                                                                                                                                                                                                                                                                                                Length 295;
                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                       Score 1067; DB 21;
Pred. No. 2.1e-101;
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shspipnt-tfrlramaphst----
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                                                                                                                                                                                                                                                                                                                                              61.7%;
nilarity 63.0%;
Conservative 45
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                                                                                                                              Thorpe
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                                                                                             98US-0082960
                                                                                                                                                                                  in transgenic plants
                                                                            99WO-US08791
                                                                                                             (DUPO ) DU PONT DE NEMOURS
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                                                                                                                                               WPI; 2000-072181/06
N-PSDB; AAZ29167.
                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                        295
                                                                                                                                                                                                    Fig
                                           WO9955882-A1
                                                                                             24-APR-1998;
                          Glycine max
                                                            04 - NOV - 1999
                                                                            22-APR-1999
                                                                                                                                                                                                                                                                                                                                                                  201;
                                                                                                                              Cahoon RE,
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Best Local
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These
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Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the European Patent Office.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel polynucleotides derived from Coryneform bacteria, for identify mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ή
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140 ENGWRCAENSADF -- - VWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10 lalelaeladsitldrfeasdlevsskpdmtpvsdadlateealrekiatarpadsilge
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                                                                                                   saccharide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 17; SEQ ID NO: 4391; 246pp + Sequence Listing; English.
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                                                                                                  acid synthesis; vitamin;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 310.5; DB 2 Pred. No. 1.8e-23;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S, Hayashi
Ozaki A;
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                                                     ID NO:
                                                  SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mizoguchi H, Ando
Senoh A, Ikeda M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42;
                                                 protein fragment
                                                                                                                                                                                                                                                                                                                                                                                  99JP-0377484.
2000JP-0159162.
2000JP-0280988.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (KYOW ) KYOWA HAKKO KOGYO KK.
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                                                                                                     amino
                                                                                                                                                                                                                                                                                                                                    2000EP-0127688
                                                                                                                                                                               Corynebacterium glutamicum.
 entry)
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                                                                                                                             organic acid synthesis.
                                                                                                   bacterium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-376931/40
N-PSDB; AAH65856.
(first
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eoside;
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or
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                                                                                                                               Corynebacterium glutamicum; carbon metabolism and energy produc SMP protein; sugar metabolism and oxidative phosphorylation profine chemical production; organic acid; proteinogenic amino acid nonproteinogenic amino acid; purine base; pyrimidine base; nucleotide; lipid; saturated fatty acid; unsaturated fatty acid carbohydrate; aromatic compound; vitamin; cofactor; polyketide; diagnosis; Corynebacterium diphtheriae; evolutionary study.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acid encoding an for production amino acids,
                                                                                                                SEQ ID NO:278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Haberhauer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated Corynebacterium glutamicum nucleic acid metabolism and oxidative phosphorylation protin for modulation of production of fine chemicals e.g. aminararbohydrates or enzymes -
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                                                                                                                SMP protein sequence
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-RVHKEALDALR
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99DE-1031412.
99DE-1031419.
99DE-1031424.
99DE-1031424.
99DE-1031431.
99DE-1031431.
99DE-1031433.
99DE-1031434.
99DE-103180.
99DE-103227.
99DE-1032227.
99DE-1032227.
99DE-1032924.
99DE-1032973.
99DE-1042086.
99DE-1042076.
99DE-1042076.
99DE-1042086.
99DE-1042086.
99DE-1042086.
99DE-1042086.
                                                            Protein;
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                                                                                                                Corynebacterium glutamicum
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                                                                                               entry)
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N-PSDB; AAF71498.
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                                                            standard;
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                                                                                                                                                                                                                     WO200100844-A2
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9-JUL-1999;
9-JUL-1999;
9-JUL-1999;
3-SEP-1999;
3-SEP-1999;
3-SEP-1999;
3-SEP-1999;
3-SEP-1999;
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3-SEP-1999;
3-SEP-1999;
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                                                                                              30-APR-2001
                                                                                                                                                                                                                                       04-JAN-2001
                                                                                                                                                                                                                                                                       25-JUN-19
08-JUL-19
08-JUL-19
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14-JUL-19
14-JUL-19
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309
                 241
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11;
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                                                                                                                                                 AAB79243 to AAB 79633 which are involved in carbon metabolism and energy production. The C. glutamicum SMP gene can be used in vectors (II) for expression in host cells and production or modulation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VAQRAADAAGEV-LRKYFRQRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHAIFGE
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ed. No. 1.8e-23;
Mismatches 101;
                                          537-538; 1246pp; English
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33.3%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260 AA;
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                                   Claim 20;
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Best Local S
Matches 91
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMP proteins activity of host cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          interest,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sugar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated Corynebacterium glutamicum nucleic acid encoding a metabolism and oxidative phosphorylation protein for production modulation of production of fine chemicals e.g. amino acids, carbohydrates or enzymes -
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99DE-1031510.
99DE-10315227.
99DE-1032227.
99DE-1032973.
99DE-1032973.
99DE-104208.
99DE-1042086.
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99DE-1042086.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kroeger
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N-PSDB; AAF71499.
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                                25-JUN-1999;

08-JUL-1999;

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           3-JUN-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This protein comprises a thermostable phosphatase, designated 28phl, of Aquifex pyrophilus. The invention relates to claimed polynucleotides (see AAV03301-20) coding for claimed thermostable phosphatases (see AAW42380-95). Vector and host cells are used to produce the enzymes, which can be used in a claimed method to hydrolyse phosphate bonds. They can also be used in enzyme labelling processes, in certain recombinant DNA techniques, in ELISA immunoassays, in enzyme linked gene probes, in research applications for removing 5' phosphates in polynucleotides prior tend labelling, and in the pharmaceutical, food, detergent, and baking industries.
                                                                                                                                                                                                                                                                                                                                                                                            thermostable enzyme; thermophilic bacterium;
                                              VAQRAADAAGEV-LRKYFRQRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHAIFGE
             RWIGVDGKQT - - TLNG - - - QFISVRSCNLLAQAYL - YTTSPHLFEADAEDAFIRVRNKV -
                                                                                                                                                  KVPLYGCDCYAYALI.ASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRG-DKLHWPV
                                                                                                                                                                 food
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               useful in pharmaceutical,
                                                                                                                                                                                                   336
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                                                                                                                                                                                                                Aquifex pyrophilus phosphatase (28ph1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (RECO-) RECOMBINANT BIOCATALYSIS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Thermostable phosphatase(s) - usdetergent, and baking industries
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                                                                                                                                                                                                                                                                                        standard; Protein;
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N-PSDB; AAV03317.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 11; Page
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Length 265;

DB 19;

286;

Score

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16.

Query Match

11

Gaps

39

Indels

-23; 101;

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Similarity 91; Conser

Query Match

Local

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This protein comprises a mature thermostable alkaline phosphatase (34A1A) of Aquifex VF5, a marine bacterium that grows optimally at 85-90 degC and pH 6.8. Its amino acid sequence, deduced from an isolated polynucleotide (see AAV03309), shows 57% identity to Escherichia coli suppressor protein subB. The invention relates to claimed polynucleotides (see AAV03301-09 and AAV03310-20) coding for claimed thermostable phosphatases (see AAW42380-95). Vector and host cells are used to produce the enzymes, which can be used in a claimed method to hydrolyse phosphate bonds. They can also be used in enzyme labelling processes, in recombinant DNA techniques, in ELISA, in enzyme linked gene probes, in research applications for removing 5' phosphates in polynucleotides prior to end labelling.
                                                                                                                                             246
                                                                                         193
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                                                                                                                                                                                                306
                                      ERLVEVAQRAADAAGEVLRKYF-RQRVE-IIDKEDHSPVTIADREAEEAMVSVILKSFPT 133
                                                                                                                                                                      181
               Gaps
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                                                      134 HAIFGEENGWRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPI
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                                                                                                                                                                                                             thermostable enzyme; thermophilic bacte
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              Indels
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Pred. No. 6.4e-21;
3; Mismatches 105;
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                                                                                                                                                                                                                                                                                                                                             264 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Thermostable phosphatase(s) - usdetergent, and baking industries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      English.
                                                                                                                                                                                                                                                    PVTAESRPTSFNVVAAGDARVH 328
llarity 29.8%; P. Conservative 53;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        o; 128pp;
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Similarity 78; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lee E,
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rrotein identification; signal transduction pathway; metabolic pathway;
hybridisation assay; genetic mapping; gene expression control; promoter;
termination sequence.
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                                                  64
                                           ERLVEVAQRAADAAGEVLRKYFR - - QRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPT
                                                                            RNKVKVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLH
                                                                    HAIFGEENGWRCAENS-ADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQP
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                                                                                                                     yfdklywgakglgayvngkrikvkdneslkhagvvygfpsrsrrdislylnifkdvfyev
                  28;
 Length 264;
                  Indels
                                                                                                     ILRERWIGVDGKQTTLNGQE1SVRSCNLLAQAYLYTTSPHLFEADA----
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                                                                                                                                                 DB 19;
.3e-20;
es 106;
Score 279; DB 19
Pred. No. 3.3e-20
; Mismatches 10
                                                                                                                                                                                                                                                                                    thaliana protein fragment
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990S-0123180.
990S-0123548.
990S-0125788.
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05-MAR-1999;
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06-MAY-1999;
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Query Match
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| 14-JUL-1999;<br>15-JUL-1999;<br>16-JUL-1999;<br>16-JUL-1999;<br>19-JUL-1999;             | - JUL - 1999<br>- JUL - 1999<br>- JUL - 1999  | - JUL-1999<br>- JUL-1999<br>- JUL-1999               | - JUL - 1999<br>- JUL - 1999<br>- JUL - 1999                                     | -JUL-1999<br> -JUL-1999                            | 2-JUL-1999<br>2-JUL-1999                          | 2-JUL-1999             | 3-JUL-1999                                       | 3-JUL-1999<br>3-JUL-1999                       | 5-JUL-1999<br>7-JUL-1999 | 7-JUL-1999            | 7 - JUL - 1999<br>3 - JUL - 1999               | 2-AUG-1999            | 2-AUG-1999                                     | 3-AUG-1999<br>1-AUG-1999 | 4 - AUG - 1999        | 5-AUG-1999<br>5-AUG-1999                      | 5-AUG-1999<br>5-AUG-1999                     | 9-AUG-1999<br>9-AUG-1999 | 0-AUG-1999           | 2-AUG-1999                                   | 3 - AUG - 1999<br>3 - AUG - 1999           | 6-AUG-1999          | 8 - AUG - 1999      | 0-AUG-1999<br>0-AUG-1999                   | 0-AUG-1999<br>3-AUG-1999 | 3-AUG-1999          | 5 - AUG - 1999<br>6 - AUG - 1999             | 7 - AUG - 1999<br>7 - AIIG - 1999 | 7-AUG-1999           | 0-AUG-1999           | 1 - SEP - 1999                               | 7-SEP-1999           | 0-SEP-1999<br>3-SEP-1999                     | 5-SEP-1999           | 6-SEP-1999<br>0-SEP-1000 | 2-SEP-1999           | 3-SEP-1999<br>4-SEP-1999 | 8-SEP-1999         | 9-SEP-1999              |
| 7  | 98<br>88<br>80<br>80  | . O. O. C  | P. P. R.                                     | PR<br>PR   | PR<br>PR  | 2 A A                  | . A. C   | 7 Q  | P.R.                     | PR                    | 7 Y Y  | PR                    | PR   | PR                       | & d. c                | 7 P   | PR<br>PR                                     | PR                       | E A C                | Z C C  | ው ው<br>ጁ ኤ                                 | PR                  | PR                  | 7 Y Y                                      | 24 C                     | PR                  | ፓ<br>አ ፕ                                     | PR<br>PR                          | PR                   | PR                   | 7. G   | PR                   | ra<br>PR                                     | PR                   | PR C                     |                      | <b>&amp;</b> & &         |                    | PR                      |
|  |   |  |  |  |   |                        |  |  |                          |                       |  |                       |  |                          |                       |   |  |                          |                      |  |  |                     |                     |  |                          |                     |  |                                   |                      |                      |  |                      |  |                      |                          |                      |                          |                    |                         |
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| 990S-0123180.<br>990S-0123548.<br>990S-0125788.<br>990S-0126264.<br>990S-0126785.        | 30S-012/402<br>30S-0128234<br>30S-0128714<br>30S-0128845  | 305-0130077<br>305-0130449                           | 9US-013U510<br>9US-0130891<br>9US-0131449  | 9US-013204   | 9US-013248  | 9US-01324              | 905-01324<br>905-01328<br>905-01324              | 9US-0134<br>9US-0134                           | 9US-0134<br>9US-0134     | 9US-0134              | 9US-0134<br>9US-0134                           | 90S-0135              | 90S-0135<br>90S-0135                           | 90S-0136                 | 9US-0136              | 90S-0137<br>90S-0137                          | 9US-013<br>9US-013                           | 9US-013                  | 90S-013<br>90S-013   | 90S-013<br>90S-013                           | 9US-01<br>9US-01                           | 90S-01              | 905-01<br>905-01    | 9US-01<br>9US-01                           | 9US-01                   | 90S-01              | 90S-013<br>90S-013                           | 9US-013                           | 90S-013              | 90S-013              | 905-014<br>905-014                           | 90S-014              | 90S-014<br>90S-014                           | 9US-014              | 9US-014                  | 905-014<br>905-014   | 9US-014                  | 90S-01<br>90S-01   | 9US-014297              |
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n control;
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mapping; gene 6
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them,
                                                                                                                                                                                                                                                                                                                                                                                                           This is the amino acid sequence of maize myo-inositol
monophosphatase-3, an enzyme involved in the metabolism of
phytate. cDNA (see AAX24410) encoding the enzyme was isolated fro
a maize immature ear cDNA library. Polynucleotides (see AAX24400,
AAX24403, AAX24407 and AAX24410-12) encoding maize
phosphatidylinositol-3-kinase (see AAW97881), myo-inositol
1,3,4-triphosphate 5/6-kinase (see AAW97881), myo-inositol
1-phosphate synthase and myo-inositol monophosphatase-3, all
enzymes involved in phytate metabolism, are claimed. The
invention relates to the use of such genes to reduce the
levels of phytate, and/or increase the levels of non-phytate
phosphorus, in plants used for food or feed. The genes are
especially used to improve the nutritional content of plants such
as corn and soybean. Transgenic plants, and seed produced by them
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              food
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                                                                                                                          maize; corn; phytate; animal nutrition; feedstuff;
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                                                                                                                         monophosphatase-3;
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22-JUL-1997;
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08-AUG-1997;
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PR 02-AUG-1999; 99US-0145519.

PR 02-AUG-1999; 99US-0146386.

PR 02-AUG-1999; 99US-0146386.

PR 02-AUG-1999; 99US-0147204.

PR 04-AUG-1999; 99US-0147204.

PR 06-AUG-1999; 99US-0147204.

PR 06-AUG-1999; 99US-0147303.

PR 06-AUG-1999; 99US-0147303.

PR 10-AUG-1999; 99US-0147303.

PR 10-AUG-1999; 99US-014414.

PR 11-AUG-1999; 99US-014414.

PR 11-AUG-1999; 99US-014414.

PR 21-AUG-1999; 99US-014417.

PR 21-AUG-1999; 99US-014417.

PR 21-AUG-1999; 99US-014917.

PR 21-AUG-1999; 99US-015066.

PR 21-AUG-1999; 99US-015069.

PR 21-AUG-1999; 99US-015069.

PR 21-CCT-1999; 99US-01509.

PR 21-CCT-1999; 9
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10 277 384 114 174 Gaps 54 svgvlyrgnpaaasvvefvggpmcwntrtfsatagggalcngqkihvsktdaverallit - LHWPVTAESRPTSFNVVAAG --MSTV RASFAAGAAGRRAAAVGELATERLVEVAQRAADAAGEVLRKYFRQRVEI IDKEDHSPVTI --VIGVIDQPIL--RERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYT -TSPHLFEADAEDAFIRVRNKVKVPLYGCDCYAYALLASGFVDIVVESGL 47; 400; MLSSSSSTHSDTSPFPGLASANP - - - NPRSRLLRLRAASPVSSAVLSASGRQP Length Indels 5; DB 21; 2.7e-17; les 165; Score 253.5; Pred. No. 2.7e 5; Mismatches KPYDFLSLVPVIEGAGGSITDWRGDK---55; 99US-0161404. 99US-0161405. 99US-0161406. 99US-0161359. 99US-0161360. 99US-0161920. 99US-0161992. 99US-0161993. 14.7%; ilarity 25.8%; Conservative 5 l Similarity 93; Conserv LIALLHNGKP 25-OCT-1999; 25-OCT-1999; 26-OCT-1999; 26-OCT-1999; 26-OCT-1999; 28-OCT-1999; 28-OCT-1999; 28-OCT-1999; 28-OCT-1999; ry Match Local 35 52 Query Ma Best Loc Matches 7 95 153 278 325 175 212 115 g q qq g ò a ô a ò ò ò

Search completed: May 30, 2002, 17:15: Job time: 614 sec

GenCore version 5.1.3 (c) 1993 - 2002 Compugen Ltd Copyright

using sw model protein search, OM protein

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W.R

.... VVAAGDARVHKEALDALF US-09-686-522C-14 1730 1 MLSSSSTHSDTSPFPGLAS..... Perfect score:

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Sequence:

283224 Total number of hits satisfying chosen parameters residues 283224 seqs, 96134422 Searched:

length: 0 length: 2000000000 seq Minimum DB Maximum DB

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

PIR\_73:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*

Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being particular and is derived by analysis of the total score distribution.

### SUMMARIES

|   | !              | othetical prot | ouo  | ilar to mlcb17 | obable inosito | ositol monophos | agenic | tragenic suppr | able inosit | tragenic suppre | pha  | -inositol-1(o | bable monopho | pressor prot | sitol-1(or 4) | itol-1(or | tragenic supp | ragenic suppr | sitol monop | itol | itol-1(or 4)- | monophos | A protein (A) | ositol | tragenic supp | tragenic sup | tragenic supp | ositol-1(or | ositol monophos | ositol monopho |
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|   | D              | T085           | 3303 | 9825           | 9529           | 8752            | AF3515 | 7489           | 2035        | 8316            | 4531 | 7047          | 7064          | 6410         | 0779          | 6503      | 9105          | 1082          | F217        | 8228 | 3358          | 3314     | 14            | H329   | 826           | H301         | 8429          | 0280        |                 | H266           |
|   | DB             |                | ~    | ~              | ~              | 7               | 7      | ~              | 7           | 7               | 7    | ٦             | ~             | ٦            | 7             | ٦         | ~             | ~             | 7           | 7    | 7             | ~        | 7             | 7      | 7             | ~            | 7             | 7           | 7               | 7              |
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| inositol-1(or 4)-m<br>extragenic supress | ಡ      | _      | ä      | inositol monophosp |        | myo-inositol-1(or | probable inositol | accG protein - Agr | dso    | exopolysaccharide | pssB protein [impo | probable inositol | extragenic suppres | inositol monophosp |
|--|--------|--------|--------|--------------------|--------|-------------------|-------------------|--------------------|--------|-------------------|--------------------|-------------------|--------------------|--------------------|
| T12205<br>F82554                         | A86438 | S76736 | T50642 | AE3393             | E72255 | E69864            | D95885            | T03436             | AG3245 | AB2875            | C97651             | G95861            | AB1208             | G97583             |
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| 235                                      | ,      | 23     | 6      | 29.                | 26.    | 21.               | 22                | 221                | 221    | 221               | 220                | 220               | 218                | 218                |
|  |        |        |        |                    |        |                   |                   |                    |        |                   |                    |                   |                    |                    |

## ALIGNMENT

RESULT

| T08560 hypothetical protein T22F8.20 - Arabidopsis thaliana C; Species: Arabidopsis thaliana (mouse-ear cress)  |   |
|---|---|
| C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 17-Mar-2000<br>C;Accession: T08560<br>R;Bevan, M.; Zimmermann, W.; Grueneisen, A.; Wambutt, R.; Bancroft, I.; Mewes | text_change 17-Mar-2000<br>;, R.; Bancroft, I.; Mewes |
| submitted to the Protein Sequence Database, May 1999 A; Reference number: 216442 A; Accession: T08560   |   |
| A; Molecule type: DNA A; Residues: 1-286 <bev> A; Cross-references: EMBL: ALO50351; GSPDB: GN00062; ATSP:T22F8.20</bev>   | ISP:T22F8.20  |
| A; Experimental source: cultivar Columbia; BAC Clone Tzzrb<br>C; Genetics:<br>A; Gene: ATSP: T22F8.20<br>A; Map position: 4   | 1.22FB  |
| A;Introns: 58/1; 84/2; 116/1; 132/3; 174/2; 196/3; 226/3; 264/1<br>C;Superfamily: suppressor protein suhB   | 226/3; 264/1  |
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H.W.;

ö 286; Indels Length Score 1020; DB 2; Pred. No. 9.3e-73; 5; Mismatches 35; 45; ch 59.0%; Similarity 69.5%; 182; Conservative 4 Query Match Best Local S Matches 182

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315 256 204 g ò

316 264 õ

~ RESULT AG3034

(stra - Agrobacterium tumefaciens 01-Feb-2002 #text\_change inositol monophosphatase family protein [imported] C; Species: Agrobacterium tumefaciens C; Date: 11-Jan-2002 #sequence\_revision 11-Jan-2002 C; Accession: AG3034 R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; C

¥.; G.E.; Chen, D.; Chen, L.; Wood,

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erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, I.; Karp, P.; Romero, P.; Zhang, S.
Science 294, 2317-2323, 2001
A; Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, ster, E.W.
A; Title: The Genome of the Natural Genetic Engineer Agrobacterium tume A; Reference number: AB2577; PMID:11743193
A; Accession: AG3034
A; Reference number: AB2577; PMID:11743193
A; Accession: AG3034
A; Reference number: AB2577; PMID:11743193
A; Reference number: AB2577; PMID:1174
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A; Molecule type: DNA
A; Residues: 1-297 <KUR>
A; Cross-references: GB: AE007870; PIDN: AAK89535.1; PID: g15159414;
C; Genetics:
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nce number: A97359; PMID:11743194
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A; Map position: linear chromosome
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?; Goodner, B.; Hinn.

Liu, F.; Wollam, C.;

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Probable inositol monophosphatase (imported) - Sinorhizobium meliloti (strain 1021) | C.Species: Sinorhizobium meliloti | C.Species: 34-Aug-2001 #sequence_revision 24-Aug-2001 #text_change 30-Sep-2001 | C.Accession: F95293 | R.Barnett, M.J.; Fisher, R.F.; Jones, T.; Komp, C.; Abola, A.P.; Barloy-Hubler, F.; | S. Kaating, D.H.; Palm, C.; Peck, M.C.; Surzycki, R.; Wells, D.H.; Yeh, Proc. Natl. Acad. Sci. U.S.A. 98, 9883-9880, 2001 | A.Title: Nucleotide sequence and predicted functions of the entire Sinorhizobium mel A.Recession: F95293 | A.Status: Preliminary | A.Residues: P. Pinnan and P. P. A.Reference number: A95262; MUD:21396509; PMID:11481432 | A.Status: Preliminary | A.Residues: 1-308 < KUR> A.Residues: 1-308 < Kull and and an academy of the leanue symbion of Sinorhizobium mellloti. National A.Reference number: A96039; MUID:21368234; PMID:11474104 | A.Ritle: The composite genome of the leaume symbion sinorhizobium mellloti. C.Genetics: A.Gene: SMa0483 | A.Gene: SMa0483 | A.Gene: SMa0483 | A.Gene: Plasmid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70 VGELATERLVEVAQRAADAAGEVLRKYFRQRVEIIDKEDHSPVTIADREAEEAMVSVILK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | |: :||:|| |: |||| | : :| | : :| | : :|
DNPMTGDRWLGVSGQPTTLNNVPIRTASTTALATAFIANGNPDAFSPADKSRVESLRRIT
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--NVGLDRDHIWVIDPIDGTRAFISGVPVWGTLIGFQSSGRATMGIMDQPFTKERY
                                                                           GCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRGDKLHWPVTAESRP
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                                                                                                                                                                                                                Score 483; DB 2; 1
Pred. No. 1.8e-30;
3; Mismatches 103;
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larity 39.6%;
Conservative 3
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extragenic suppressor - Synechocystis sp. (strain PCC 6803)
NyAlternate names: protein s111959
C; Species: Synechocystis sp.
A; Variety: PCC 6803
C; Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000
C; Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000
C; Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000
C; Accession: S74899
R; Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima
O, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamada, M.; Yi
DNA Res. 3, 109-136, 1996
A; Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechoc;
S.
A; Reference number: S74899
A; Reference number: S74899
A; Accession: S74899
A; Molecule type:
A; Molec
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QPILRERWIGVDGKQTTLNG----QEISVRSCNLLAQAYLYTTSPHLFEADA-EDAFIRV
||| :|| || || :|| :||
QPISGDRWQGVQGEQSNVNGIPLVNPYKASEINLTA-ACIVSTTPLMFTTPVQQQKMADI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             76 ERLVEVAQRAADAAGEVLRKYFR----QRVEIIDKEDHSPVTIALAREAEEAMVSVILKSF
                                     EAMVSVILKSFPTHAIFGEENGWRCAENS-ADFVWVLDPIDGTKSFITGKPLFGTLIALL
                                                                                                                                                                                                                                                                                   HNGKPVIGVIDOPILRERWIGVDGKQTTLN-----GQEISVRSCNLLAQAYLYTTSPHLF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 22.9%; Score 396.5; DB 2; Local Similarity 36.9%; Pred. No. 9.4e-24; Les 101; Conservative 49; Mismatches 99;
                                                                                                                                                                                                                                                                                                                                                                                                                    SITDWRGDKLHWPVTAESRPTSFNVVAAGDARVHKEALDAL
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Best Local S
Matches 101
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C; Species: Brucella melitensis
C; Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 15-Feb-2002
ACCESSION: AF3515
A; DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivanova,
A; DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivanova,
A; Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, D.; Letess
Proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A; Title: The genome sequence of the facultative intracellular pathogen Brucella melitens
A; Reference number: AD3252; PMID:11756688
A; Accession: AF3515
A; Molecule type: DNA
A; Residues: 1-272 < KUR>
                                                                                                                                Eisen, J.; Heidelberg, J.
nn, M.L.; Haft, D.H.; Kolon
Venter, J.C.; Fraser, C.M.
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inositol monophosphatase family protein [imported] - Caulobacter crescentus
C; Species: Caulobacter crescentus
C; Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 01-Mar-200
C; Accession: C87528
R; Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.;
B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haf
n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.
Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A; Title: Complete Genome Sequence of Caulobacter crescentus.
A; Reference number: A87249; MUID: 21173698; PMID: 11259647
A; Accession: C87528
A; Accession: C87528
A; Residues: 1-278 <STO>
A; Residues: 1-278 <STO>
A; Residues: 1-278 <STO>
A; Cross-references: GB: AE005673; NID: 913423761; PIDN: AAK24223.1; GSPDB:GN(Genetics:
C; Genetics:
A; Genetics:
A; Genetics:
C; Superfamily: suppressor protein subB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match

27.6%; Score 477; DB 2;
Best Local Similarity 40.8%; Pred. No. 4.69-30
Matches 116; Conservative 48; Mismatches 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73 LATERLVEVAQRAAD---AAGEVLRKYFRQRVEIIDK-
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Cross-references: GB:AE008918; I
Experimental source: strain 16M
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116; Conser
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Best Local S
Matches 116
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A.; Larbig,
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         hitehead,
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YPKHT
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C83169
extragenic suppressor protein SuhB PA3818 [imported] - Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                          --LLAQAYLYTTSPHLFEADAEDAFI
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il, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Nature 413, 523-527, 2001
A; Title: Genome sequence of Yersinia pestis, the causative agent A; Reference number: AB0001; MUID:21470413; PMID:11586360
A; Accession: AC0353
A; Status: preliminary
A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 1-267 <KUR>
A; Cross-references: GB:AL590842; PIDN:CAC92150.1; PID:g15980865; C; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
                                                                                                                                                                                                                                                                                                        Length 267
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                                                                                                                                                                                                                                                                                                      Score 293; DB 2; 1
Pred. No. 1.3e-15;
43; Mismatches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 292; DB 2;
Pred. No. 1.6e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54; Mismatches
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illarity 29.7%;
Conservative 54
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31.68;
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36; Conservative
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PILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTTSPHL-FEADAEDAFIR-

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monophophatase [imported] - Mycobacterium leprae
C; Species: Mycobacterium leprae
C; Species: Mycobacterium leprae
C; Date: 31-Jan-2000 #sequence_revision 31-Jan-2000 #text_change 18-Feb-2000
C; Accession: T45317
R; Parkhill, J; Barrell, B.G.; Rajandream, M.A.
R; Parkhill, J; Barrell, B.G.; Rajandream, M.A.
Submitted to the EMBL Data Library, August 1997
A; Reference number: 222864
A; Reference number: 222864
A; Reference number: 22864
A; Reference number: 22867
A; Staus: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-255 <PAR>
A; Residues: 1-255 <PAR>
A; Residues: 1-255 <PAR>
A; Cross-references: EMBL:298271; PIDN:CAB11010.1
A; Experimental source: cosmid B1779
C; Genetics:
A; Note: MLCB1779.29
C; Superfamily: suppressor protein suhB
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RNKVKVPLYGCDCYAYALLASGFVDIVVESGLKPYDFLSLVPVIEGAGGSITDWRG-
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                                                                                                                                                -DKLHWPVTAESRPTSFNVVAAGDARVHKEALDALR 336
                                                                                                                                                                        : ||: : | : : -- : -- IVAGNTKCFKALLTTIQ
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inositol-1(or 4)-monophosphatase (EC 3.1.3.25) isoform 3 · tomato
N.Alternate names: myo-inositol-1-phosphatase
C;Species: Lycopersicon esculentum (tomato)
C;Date: 14-May-1999 #sequence_revision 14-May-1999 #text_change 03-Jun-2002
C;Accession: T07795
R;Gillaspy, G.E.; Keddie, J.S.; Oda, K.; Gruissem, W.
Plant Cell 7, 2175-2185, 1995
A;Title: Plant inositol monophosphatase is a lithium-sensitive enzyme encoded by A;Reference number: 216138; MUID:96351935; PMID:8718627
A;Title: Plant inositol monophosphatase is a lithium-sensitive enzyme encoded by A;Reference number: 216138; MUID:96351935; PMID:8718627
A;Tatus: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 1-268 <GIL>
A;Cross-references: EMBL:U39059; NID:g1098970; PIDN:AAB19031.1; PID:g1098971
A;Experimental source: strain VFNT Cherry
C;Genetics:
A;Gene: IMP3
C;Function:
A;Description: removes phosphate from myo-inositol-1-phosphate and myo- inositol
A;Pathway: inositol phosphate metabolism
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                                                                                                                                    sor protein suhB - Haemophilus influenzae (strain Rd KW20)
ss: Haemophilus influenzae
10-Sep-1999 #sequence_revis:on 10-Sep-1999 #text_change 28-Jul-2000
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A; Cross-references: GB:U32775;
C; Genetics:
A; Gene: suhB
C; Superfamily: suppressor prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        suppressor
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Best Local S
Matches 84
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R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris,
Connor, R.; Davies, R.; Pevlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares,
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the comp
A;Reference number: A70500; MUD:98295987; PMID:9634230
A;Accession: B70646
A;Status: preliminary; nucleic acid sequence not shown; frr-
A;Molecule type: DNA
A;Residues: 1-260 <COL>
A;Experimental source.
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Cross-references: GB:Z83867; GB:AL123456; NID:g3261695; PIDN:CAB06277.1;
Experimental source: strain H37Rv
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C;Genetics:
A;Gene: imp2
C;Superfamily: suppressor protein suhB
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                                                                          Score 265.5; DB 2;
Pred. No. 1.9e-13;
; Mismatches 117;
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C; Superfamily: suppressor protein subB
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Published

Post-processing

g printed to have being pr cted by chance to he of the result being score distribution. number of results predicted to or equal to the score of tanalysis of the total score number the nu No. is the n greater than s derived by NO. score gand is Pred

SUMMARIES

#### Sequence 48, Appl Sequence 36, Appl Sequence 17, Appl Sequence 17, Appl Sequence 2, Appl Sequence 262, Appl Sequence 262, Appl Sequence 55, Appl Sequence 4, Appli Sequence 2, Appli Sequence 3, Appli Sequence 3, Appli Sequence 6, Appli Sequence 6, Appli Sequence 54, Appli ption Descri US-09-902-525-48 US-09-902-525-48 US-09-921-232-17 US-09-921-330-17 US-09-921-330-17 US-09-921-329-17 US-09-921-329-17 US-09-987-446-2 US-09-987-446-2 US-09-987-446-2 US-09-987-446-2 US-09-896-852-55 US-09-86-852-55 US-09-86-852-55 US-09-86-852-55 US-09-86-85-33 US-09-861-289-6 US-09-861-289-6 US-09-861-289-6 US-09-861-289-6 US-09-861-289-6 US-09-861-289-6 99 100 100 100 100 100 100 DB 265 264 267 267 267 252 1616 268 667 777 3472 3139 31877 11877 11877 Length Ouery Match N188888844440000000000000 00444C0000004444444 286 279 255.5 255.5 127 101 101 90 88 84 84 84 84 83.5 83.5 Score Result No. 1264597869126459786

| Sequence 5213, Ap Sequence 11025, A Sequence 11966, A Sequence 11834, A Sequence 31, Appl Sequence 31, Appl Sequence 2, Appli Sequence 12027, A Sequence 12027, A Sequence 1276, Appl Sequence 11771, Appl Sequence 11830, A Sequence 11, Appli Sequence 2, Appli Sequence 5, Appli Sequence 5, Appli Sequence 5, Appli   |  |
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| 0 US-09-815-242-11025<br>0 US-09-815-242-11025<br>0 US-09-815-242-11966<br>0 US-09-815-242-11834<br>0 US-09-861-242-11834<br>0 US-09-861-289-31<br>0 US-09-961-289-31<br>0 US-09-952-677-6<br>0 US-09-912-917-2<br>0 US-09-915-242-11869<br>0 US-09-815-242-11869<br>0 US-09-815-242-1187<br>0 US-09-815-242-11270<br>0 US-09-815-242-11270<br>0 US-09-815-242-11270<br>0 US-09-815-242-11187<br>0 US-09-815-242-11187<br>0 US-09-815-242-11187<br>0 US-09-815-242-11187<br>0 US-09-815-242-11187<br>0 US-09-945-301-4<br>0 US-09-945-301-4<br>0 US-09-945-301-4<br>0 US-09-945-301-4<br>0 US-09-945-301-4<br>0 US-09-960-631A-5<br>0 US-09-801-368-202 | ALIGNMENTS  /09902525  nt Biocatalysis, Inc. THERMOSTABLE PHOSPHATAS,; 54 SS: 6 Richardson P.C. ecutive Square, Suite 1400 ecutive Square, Suite 1400 DATA: BER: Windows 95 FEQ for Wind |
| 88 312 7 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4  | CATION UNDATESTAL  TON:  RECOMDINA  VENTION:  GOUENCES  NCE ADDAE  SEE: Fish  1425 Ex  LA Jolla  CA  CA  TYPE: Di  T |
| 88 88 88 88 88 88 88 88 88 88 88 88 88  | 525-48 48, APPli 0. US20020 L INFORMAT PPLICANT: ITLE OF IN UMBER OF S STATE: CITY: STATE: COMPUT COMPUTER RE MEDIUN COMPUTER RE MEDIUN COMPUTER RE APPLIC FILING APPLIC F |
| 00000000000000000000000000000000000000  | RESULT 1 US-09-902- ; Sequence ; Patent N ; GENERA ; GENERA ; C ; C ; C ; C ; C ; C ; C ; C ; C ; C  |

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US-09-902-525-36
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US-09-921-232-17
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LENGTH: 267
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                                                                                               Length 265;
                                                                                                                          Indels
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COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/902,525
FILING DATE: 09-Jul-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/202,681A
FILING DATE: 23-Dec-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Recombinant Biocatalysis, Inc.
TITLE OF INVENTION: THERMOSTABLE PHOSPHATASES
NUMBER OF SEQUENCES: 54
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APPLICATION NUMBER: 08/66,857
FILING DATE: 19-JUN-1996
APPLICATION NUMBER: 60/033,752
FILING DATE: 19-JUN-1997
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Ph.D., Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 09010/015W01
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
                                                                                                              -19;
105;
                                                                                             Score 286; DB 9;
Pred. No. 1.3e-19;
3; Mismatches 10
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e, Suite
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ADDRESSEE: Fish & Richardson
STREET: 4225 Executive Square
CITY: La Jolla
                                                     SEQ ID NO:
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IUM TYPE: Diskette
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CHARACTERISTICS
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                                                                                             th 16.5%;
Similarity 29.8%;
78; Conservative
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internal
                                       FRAGMENT TYPE: Internation | SEQUENCE DESCRIPTION: US-09-902-525-48
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TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: proteil
FRAGMENT TYPE: intern
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Sequence 36, Application U
Patent No. US20020164751A1
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 17, Application US/09921232
Patent No. US20020102681A1
GENERAL INFORMATION:
APPLICANT: Martino-Catt, Susan J.
APPLICANT: Wang, Hongyu
APPLICANT: Beach, Larry |
TITLE OF INVENTION: Polypt, tides Controlling Phytate
TITLE OF INVENTION: Metabolism in Plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
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Prud. NO. 6e-19;
54; Mismatches 1
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Pred. No. 1e-16;
Mismatches
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CURRENT APPLICATION NUMBER: US/09/921,232

CURRENT FILING DATE: 2001-08-02

PRIOR APPLICATION NUMBER: 60/055,446

PRIOR FILING DATE: 1997-08-11

PRIOR FILING DATE: 1997-08-08

PRIOR FILING DATE: 1997-08-08

PRIOR FILING DATE: 1997-07-28

PRIOR FILING DATE: 1997-07-28

PRIOR FILING DATE: 1997-07-28

PRIOR FILING DATE: 1997-07-28

PRIOR FILING DATE: 1998-07-17

PRIOR FILING DATE: 1998-07-17
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LENGTH: 264 amino ac
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
FRAGMENT TYPE: internal
SEQUENCE DESCRIPTION: SE
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30.3%;
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llarity 28.5%;
Conservative
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US-09-921-329-17
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190 DQPILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTTSPHLFEADAEDAFIRVRNKV
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TNRI
                                                                                     250 KVPLYGCD----CYAYAL----LASGFVDIVVESGL-KPYDFLSLVPVIEGAGGSITDWR
                                                                                                      133 THAIFGEENG---WRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVI
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                                                     Indels
                                                                                                                                                                                                                                                                                  APPLICANT: Wang, Hongyu
APPLICANT: Beach, Larry R.
TITLE OF INVENTION: Polypeptides Controlling Phytate
TITLE OF INVENTION: Metabolism in Plants
FILE REFERENCE: 0706D3
CURRENT APPLICATION NUMBER: US/09/921,330
CURRENT FILING DATE: 2001-08-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
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Pred. No. 1e-16;
1; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: 60/055,446
PRIOR APPLICATION NUMBER: 60/055,446
PRIOR FILING DATE: 1997-08-11
PRIOR APPLICATION NUMBER: 60/055,526
PRIOR FILING DATE: 1997-08-08
PRIOR FILING DATE: 1997-07-28
PRIOR FILING DATE: 1997-07-28
PRIOR APPLICATION NUMBER: 09/118,442
PRIOR FILING DATE: 1998-07-17
PRIOR FILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 31
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                 Sequence 17, Application US/09921330 Patent No. US20020102682A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41;
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Similarity 30.3%;
73; Conservative 4
                                                                                                                                                                                                                                                                       APPLICANT: Martino-Catt,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Zea mays
US-09-921-330-17
                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                     -09-921-330-17
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LENGTH: 267
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RESULT

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## GENERAL INFORMATION:
## APPLICANT: FARWICK, Mike, et al.
## TITLE OF INVENTION: NUCLEOTIDE SEQUENCES CODING FOR THE CYSQ GENE
## FILE REFERENCE: 032301 WD 245
## CURRENT APPLICATION NUMBER: US/09/987,446
## CURRENT FILING DATE: 2001-11-14
## NUMBER OF SEQ ID NOS: 2
## SOFTWARE: Patentin version 3.1
## SEQ ID NO 2
## LENGTH: 252
## TYPE: PRT
## ORGANISM: Corynebacterium glutamicum
## US-09-987-446-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73 LATERLVEVAQRAADAAGEVI.RKYFRQRVEIIDKEDHSPVTIADREAEEAMVSVILKSFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133 THAIFGEENG---WRCAENSADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KVPLYGCD ---- CYAYAL --- LASGFVDIVVESGL - KPYDFLSLVPVIEGAGGSITDWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    190 DQPILRERWIGVDGKQTTLNGQEISVRSCNLLAQAYLYTTSPHLFEADAEDAFIRVRNKV
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                                                       APPLICANT: Martino-Catt, Susan J.
APPLICANT: Wang, Hongyu
APPLICANT: Wang, Hongyu
TITLE OF INVENTION: Polypeptides Controlling Phytate
TITLE OF INVENTION: Metabolism in Plants
FILE REFERENCE: 0706D2
CURRENT APPLICATION NUMBER: US/09/921,329
CURRENT FILING DATE: 2001-08-02
PRIOR APPLICATION NUMBER: 60/055,446
PRIOR FILING DATE: 1997-08-11
PRIOR FILING DATE: 1997-08-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     112;
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Pred. No. 1e-16
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.0
                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 1998-07-17
PRIOR APPLICATION NUMBER: 09/677,064
PRIOR FILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 31
SOFTWARE: FastSEQ for Windows Version SEQ ID NO 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Windows Version
                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 1997-07-28
PRIOR APPLICATION NUMBER: 09/118,442
PRIOR FILING DATE: 1998-07-17
PRIOR APPLICATION NUMBER: 09/118,442
Sequence 17, Application US/09921329
Patent No. US20020110884A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/09987446 Patent No. US20020115162A1
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nilarity 30.3%;
Conservative 4:
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Best Local Similarity
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S-09-921-329-17
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LENGTH: 267
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                                                           VAQRAADAAGEVLRKYFRQRVEIIDKEDHSPVTIADREAEEAMVSVILKSFPTHAIFGEE 140
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BY COMPARATIVE ANALYSIS
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                                                                                                                     -SADFVWVLDPIDGTKSFITGKPLFGTLIALLHNGKPVIGVIDQPILRE
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                                                                            ----AADNPDRLSKDRVWIIDPLDGTKEFATGRQDWAVHIALVENGVPTHAAVGLPDLGV
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 252;
                               Indels
 Length
                              61;
 Score 127; DB 10;
Pred. No. 0.00013;
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Pred. No. 0.56;
                                                                                                                                                                                                                                                                                                                                                                     ION: INTERACTIONS OF PROTEINS 07419-032001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d. No. 0.56
Mismatches
                               Mismatches
                                                                                                                                                                                                                                                                                                                                          APPLICANT: EISEIDELY, DAVID
APPLICANT: ROCSCEEIN, Sergio H.
APPLICANT: MARCOCLE, Edward M.
TITLE OF INVENTION: DETERMINING THE FUNCTION
TITLE OF INVENTION: INTERACTIONS OF PROTEIN
FILE REFERENCE: 07419-032001
CURRENT APPLICATION NUMBER: US/09/712,363
CURRENT FILING DATE: 2000-11-13
PRIOR APPLICATION NUMBER: 60/179,531
PRIOR FILING DATE: 2000-02-01
PRIOR FILING DATE: 1999-01-29
PRIOR FILING DATE: 1999-01-29
PRIOR FILING DATE: 1999-02-01
PRIOR FILING DATE: 1999-03-26
PRIOR FILING DATE: 1999-03-26
PRIOR FILING DATE: 1999-03-26
PRIOR FILING DATE: 1999-05-14
PRIOR FILING DATE: 1999-05-14
PRIOR FILING DATE: 1999-05-14
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R FILING DATE: 1999-05-14
R APPLICATION NUMBER: 60/165,124
R FILING DATE: 1999-11-12
R APPLICATION NUMBER: 60/165,086
R FILING DATE: 1999-11-12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Mycobacterium tuberculosis US-09-712-363-262
                                                                                                                                                                                                                                                                                       US/09712363
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illarity 24.2%;
Conservative 33
7.3%;
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FastSEQ for Windows
                                                                                                                                                                                                                                                                                                               APPLICANT: Eisenberg, David APPLICANT: Rotstein, Sergio APPLICANT: Marcotte, Edward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IDQPILRERWIGVDGKQTT-
                              Conservative
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                                                                                                                                                                                  197 RWIGVDGKQTT 207
           l Similarity
37; Conserv
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US-09-712-363-262
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ENGTH: 1616
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Patent No. US20010014447A1

GENERAL INFORMATION:
APPLICANT: Milhausen, Michael James

TITLE OF INVENTION: TOXOPLASMA GONDII PROTEINS, NUCLEIC ACID MOLECULES,

TITLE OF INVENTION: USES THEREOF

FILE REFERENCE: TX-1-C2

CURRENT APPLICATION NUMBER: US/09/216,393

CURRENT FILING DATE: 1998-12-18

EARLIER FILING DATE: 1997-12-19

NUMBER OF SEQ ID NOS: 364

SOFTWARE: Patentin Ver. 2.0
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            847
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            LAAAAVWGMAR---SAQAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -GROPMSTVRASFAAGAAGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --GW----RCAENSADFVWVLDPIDG
                                                                   -- NPGRIVLIDTDAAVDASVLAGVGEPQLLVRGGTVHAPRLSPAPALLALPAAES
                                          --LKPYDFLSLVPVIE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 268;
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APPLICANT: Hunt, Jeffery C.
APPLICANT: Brojanac, Susan
APPLICANT: Brojanac, Susan
APPLICANT: Jhy-Tsing Sheu, Michael
APPLICANT: Chovan, Linda E.
APPLICANT: Tyner, Joan D.
APPLICANT: Howard, Lawrence V.
TITLE OF INVENTION: ANTIGEN COCKTAILS, P35, AN
FILE REFERENCE: 6361.US.D1
CURRENT APPLICATION NUMBER: US/09/896,852
CURRENT FILING DATE: 2001-06-29
PRIOR FILING DATE: 1998-05-28
-QSWLGADRAATLVVLTHGGVGLAGEDISD---
                                           DAFIRVRNKVKVPLYGCDCY -- AYALLASGFVDIVVESG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PGLASANPNPRSRLLRLRAASPVSSAVLSAS-
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Sequence 55, Application US/09896852
Patent No. US20020025542A1
GENERAL INFORMATION:
APPLICANT: Abbott Laboratories
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.4%;
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US-09-216-393-90
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te 90, AE
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TKAWI
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LENGTH: 268
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Best Local (
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-09-216-
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US-09-925-301-1115
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US-10-027-806-4
                      Query Match
Best Local
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                                                                                                                                                                                                   ----VNVQGDEPMIPATIIRQVADNLAQRQVGM
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J.E.G
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                                                                                        Length 667;
                                                                                                                                                                                                                                                                                                                                    ANADDFASDDNYEPLPSFVEAPVRGPD----QVPARGEAALVTEETPAQQPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Rosen et al.

TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
FILE REFERENCE: PA106
CURRENT APPLICATION NUMBER: US/09/925,301
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05882
PRIOR FILING DATE: 2000-03-08
PRIOR APPLICATION NUMBER: 60/124,270
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No. 1.7;
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                                                                                        Score 90;
Pred. No.
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   55
Windows Version 4
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Sequence 1115, Application US/09925301
Patent No. US20020052308A1
GENERAL INFORMATION:
APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Pro-
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ilarity 21.8%;
Conservative 4
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NUMBER OF SEQ ID NOS: 1694
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1115
LENGTH: 777
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NAME/KEY: SITE
LOCATION: (9)
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LOCATION: (21)
OTHER INFORMATION: Xaa
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   NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
SEQ ID NO 55
LENGTH: 667
                                            TYPE: PRT; ORGANISM: Toxoplasma
US-09-896-852-55
                                                                                                     Similarity
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YAQVSLSSNGEP
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LOCATION: (32)
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NAME/KEY: SITE
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Best Local S
Matches 67
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                                   Gaps
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                                                                  -VLSASGRQPMSTVRASFAAGAAGRRAAAVGELATERLVEVAQRA
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                                                                                                                                                                                                                                                                           -- LAQAYLYTTSPHLFEAD
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Length 777
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                                   Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Swanson, Rohald V.
APPLICANT: Swanson, Robert A.
APPLICANT: Feldman, Robert A.
APPLICANT: Schleper, Christa
TITLE OF INVENTION: NUCLEIC ACIDS AND PROTEINS FROM CEN
CURRENT APPLICATION NUMBER: US/10/027,806
CURRENT FILING DATE: 2001-12-21
PRIOR FILING DATE: EARLIER APPLICATION NUMBER: 0
PRIOR FILING DATE: EARLIER FILING DATE: 1999-09-29
NUMBER OF SEQ ID NOS: 123
SOFTWARE: FastSEQ for Windows Version 3.0
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DATE: 1999-09-29
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ore 90; DB 1 ed. No. 2.1; Mismatches
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Pred. No. 28;
24; Mismatches
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   Score 9
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US-09-817-464-2
camence 2, Application US/09817464
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ESWKTTPYQIACGISQG--LADN----
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25.5%;
    5.2%; 20.8%;
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Best Local Similarity 25.5
Matches 60; Conservative
                                    Conservative
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VWDLDRPLEED---
                  l Similarity
60; Conserv
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; ORGANISM: Ce
US-10-027-806-4
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LENGTH:
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                                                                                                               Subty
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                                   APPLICANT: FIGIT, Feter J.
APPLICANT: Kuhn, Ranier
APPLICANT: Lindaur, Kristen
APPLICANT: Lindaur, Kristen
APPLICANT: Lindaur, Irene
APPLICANT: Puttner, Irene
APPLICANT: Fortner, Irene
APPLICANT: Rnopfel, Thomas
TITLE OF INVENTION: HMR6, HMR7) and Related DNA Compounds
FILE REFERENCE: 4-19679/A/PCT
CURRENT APPLICATION NUMBER: US/09/817,464
CURRENT FILING DATE: 2001-03-26
EARLIER FILING DATE: 1996-03-19
EARLIER FILING DATE: 1994-08-19
EARLIER FILING DATE: 1994-08-19
EARLIER FILING DATE: 1993-09-20
NUMBER OF SEQ ID NOS: 26
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                       Length 912;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: DNA encoding methymycin and pikromycin FILE REFERENCE: 600.438US1
CURRENT APPLICATION NUMBER: US/09/860,846
CURRENT FILING DATE: 2001-05-18
PRIOR APPLICATION NUMBER: 09/105,537
PRIOR FILING DATE: 1998-06-26
NUMBER OF SEQ ID NOS: 43
SOFTWARE: FastSEQ for Windows Version 3.0
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APPLICANT: Sherman, D.H.
APPLICANT: Liu, H.
APPLICANT: Xue, Y.
APPLICANT: Zhao, L.
TITLE OF INVENTION: DNA encoding methy; FILE REFERENCE: 600.438US1
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; ORGANISM: Streptomyces venezuelae
US-09-860-846-33
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illarity 24.0%;
Conservative 3
Patent No. USZVVE
GENERAL INFORMATION:
APPLICANT: Flor, Peter J.
     US20020127638A1
                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Homo sapiens
US-09-817-464-2
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Best Local Similarity
Matches 65; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 33
LENGTH: 3739
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                                                                 SGRQPMSTVRASFAAGAAGRRAA - - AVGELATERLVEVAQRAADA - - AGEVLRKYFRQRV 101
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                                   Indels
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  6
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  Score 84; DB
Pred. No. 75;
5; Mismatches
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     B
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Pred. No. 75;
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TITLE OF INVENTION: DNA encoding methymycin FILE REFERENCE: 600.438US1
CURRENT APPLICATION NUMBER: US/09/860,846
CURRENT FILING DATE: 2001-05-18
PRIOR APPLICATION NUMBER: 09/105,537
PRIOR FILING DATE: 1998-06-26
NUMBER OF SEQ ID NOS: 43
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                      APPLICANT: Xue, Y.
APPLICANT: Zhao, L.
TITLE OF INVENTION: DNA encoding methymycin FILE REFERENCE: 600.438US1
CURRENT APPLICATION NUMBER: US/09/861,289
CURRENT FILING DATE: 2001-05-18
PRIOR APPLICATION NUMBER: 09/105,537
PRIOR FILING DATE: 1998-06-26
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SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                      Sequence 33, Application US/09861289
Patent No. US20020110897A1
GENERAL INFORMATION:
APPLICANT: Sherman, D.H.
APPLICANT: Liu, H.
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09-860-846-6
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Patent No. US20020164742A1
GENERAL INFORMATION:
APPLICANT: Sherman, D.H.
APPLICANT: Liu, H.
APPLICANT: Xue, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT
; ORGANISM: Streptomyces venezuelae
US-09-861-289-33
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Conservative
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Similarity 32.3%;
31; Conservative
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Xue, Y.
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Zhao,
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LENGTH: 3739
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US-09-860-846-6
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Best Local
     Query Match
Best Local
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Gaps Query Match

4.9%; Score 84; DB 9; Length 11877;
Best Local Similarity 32.3%; Pred. No. 4e+02;
Matches 31; Conservative 15; Mismatches 40; Indels 10

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102 EIIDKE-DHSPVTIADREAEEAMVSVILKSFPTHAI 136 | : : : : | | | | : | 8275 EALGADVSVAACDVADREALTAVLDSIPAEHPLTAV 8310

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Search completed: November 17, 2002, 16:44:49 Job time : 56 secs